



CHRIST

Arts and Science College

(Approved by AICTE, New Delhi and Affiliated to Pondicherry University)
(A Unit of Sam Paul Educational Trust)
Pitchaveeranpet, Moolakulam, Pondicherry - 605010.

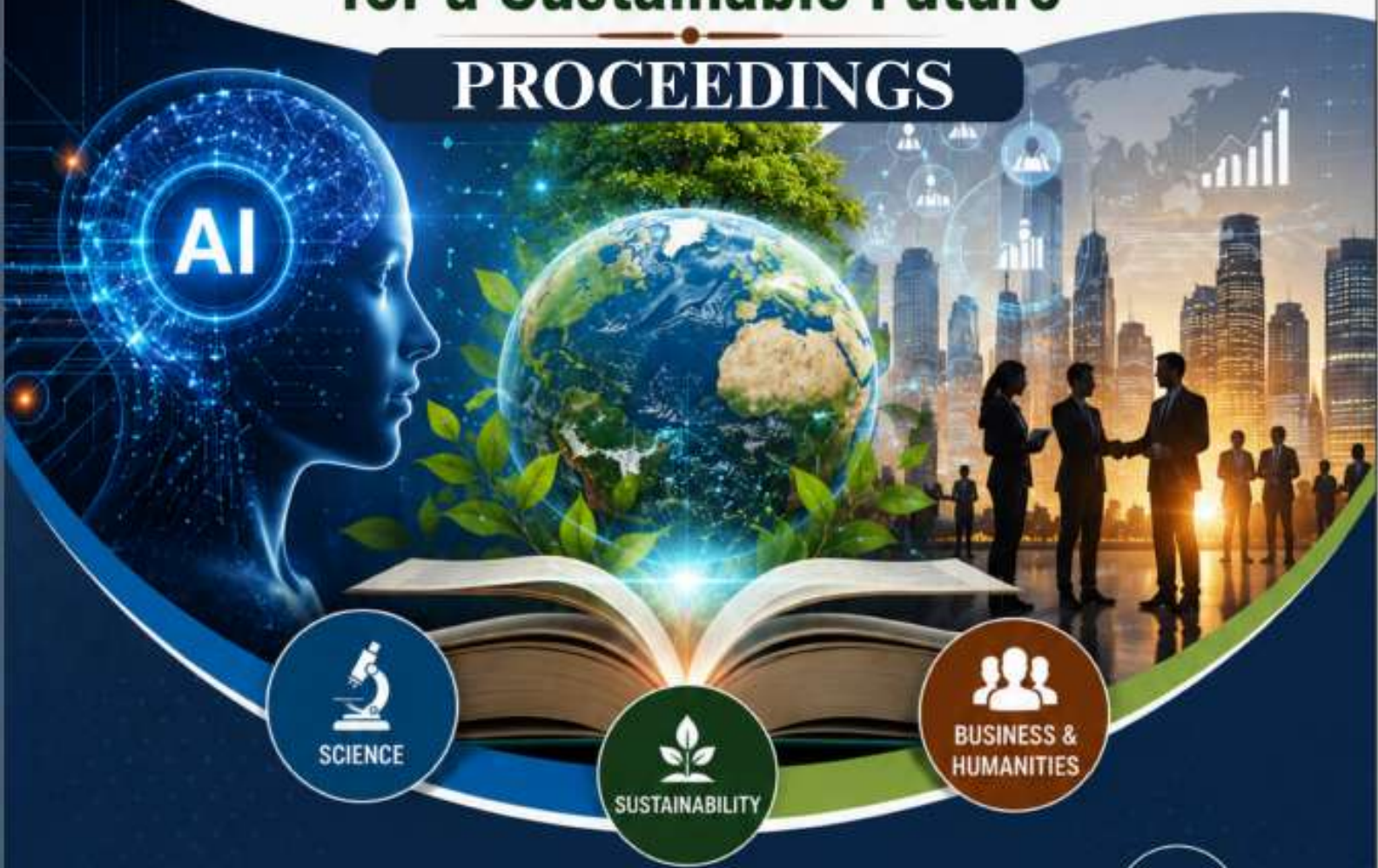


THREE DAYS INTERNATIONAL CONFERENCE

— on —

Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future

PROCEEDINGS



EDITOR:

DR. A. ANBAZHAGAN

Professor cum Principal

Christ Arts and Science College, Puducherry, India



ISBN Number

978-93-6068-452-5



CONFERENCE

**Innovating for Impact: AI-Driven Pathways Integrating Science,
Business, and Humanities for a Sustainable Future**

22 - 24 July, 2026



COPYRIGHT PAGE

Conference Title: Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future

© 2026 Christ Arts and Science College, Puducherry.

All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the prior written permission of the publisher or the organizing committee of Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future, Christ Arts and Science College, Puducherry.

ISBN: 978-93-6068-452-5

Published in July, 2026

Publisher: Aarambh Quill Publications (www.aarambhquill.in)

Conference Venue:

Christ Arts and Science College, Puducherry.

Disclaimer:

The views expressed in the chapters of this volume are those of the respective authors. The editors, organizers, and publisher bear no responsibility for the accuracy or legality of the content.

CONTENTS

Sl. No.	Particulars	Page No.
1.	Messages	i
2.	Preface	vii
3.	Institute Profile	ix
4.	About Conference	x
5.	Conference Theme	xi
6.	Conference Papers	1

Dr. S.R. Sam Paul

Chairman and Managing Director,
Sam Paul Educational Trust,
Puducherry.



Message

It is my great privilege to welcome all the distinguished delegates, eminent researchers, academicians, industry professionals, and students to this International Conference.

In today's rapidly evolving world, research plays a vital role in addressing global challenges and shaping a better future. This conference provides a unique opportunity for knowledge sharing, interdisciplinary collaboration, and the dissemination of innovative research findings that benefit society and industry.

I extend my heartfelt appreciation to the organizing committee, keynote speakers, reviewers, authors, sponsors, and participants for their unwavering support and dedication. Your contributions have been instrumental in making this conference a meaningful academic gathering.

I am confident that the conference proceedings will serve as a valuable source of knowledge and inspire future research endeavors. I wish all the participants a productive conference and every success in their academic and professional pursuits.

With warm regards,

Chairman

Mr.C.Kumaravel

M.Sc.,M.Ed.,M.Phil.,M.B.A.,PGDCM.,
Director,
Sam Paul Educational Trust,
Puducherry.



Message

It gives me immense pleasure to extend my warm greetings to all the delegates, researchers, academicians, industry experts, and students participating in this International Conference.

Research and innovation are the driving forces behind sustainable development and technological advancement. This conference serves as an excellent platform for scholars to present their original research, exchange innovative ideas, and establish meaningful collaborations across various disciplines.

I sincerely appreciate the dedicated efforts of the organizing committee, faculty members, reviewers, authors, and volunteers whose commitment has made this conference a grand success. I am confident that the technical sessions and research presentations will inspire new perspectives and contribute significantly to academic excellence.

I congratulate all the participants for their valuable contributions and wish the conference every success. May this event pave the way for future innovations and impactful research collaborations.

With best wishes,

Director

Dr.A.Anbazhagan,

M.Com.,B.Ed.,M.Sc.,M.B.A.,M.Phil.,Ph.D.,
Principal,
Christ Arts and Science College,
Puducherry.



Message

It is with great pleasure that I welcome all the distinguished delegates, eminent academicians, researchers, industry experts, and students to this International Conference.

Research and innovation are the cornerstones of academic excellence and societal progress. Conferences such as this provide an invaluable platform for sharing knowledge, exchanging ideas, fostering interdisciplinary collaboration, and promoting a culture of scientific inquiry. They inspire researchers to explore new frontiers and develop innovative solutions to contemporary challenges.

I sincerely congratulate the organizing committee for their dedication and meticulous efforts in making this conference a reality. I also extend my appreciation to the keynote speakers, reviewers, authors, sponsors, and participants for their valuable contributions. Your enthusiasm and commitment have significantly enhanced the quality and success of this academic event.

I am confident that the conference proceedings will serve as a rich source of knowledge, encourage future research collaborations, and contribute meaningfully to the advancement of science, technology, and society.

I wish the conference every success and hope that all participants have a rewarding, enriching, and memorable experience.

With Best Wishes,

Principal

CEO'S MESSAGE

It is my great pleasure to welcome all distinguished academicians, researchers, industry experts, policymakers, scholars, and students to the **Three-Day International Conference on "Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future,"** organized by **Christ Arts and Science College, Puducherry.**

Artificial Intelligence is transforming every sector of society, creating unprecedented opportunities for innovation, collaboration, and sustainable development. This conference serves as a vibrant platform for exchanging ideas, presenting impactful research, and exploring interdisciplinary solutions to global challenges through the responsible application of AI.

At **Sam Paul Educational Trust**, we are committed to promoting academic excellence, research, innovation, and value-based education. We believe that higher education should empower learners with the knowledge, skills, and ethical values needed to contribute meaningfully to society. This conference reflects our continued commitment to fostering intellectual growth and international academic collaboration.

I congratulate the organizing committee for their dedicated efforts and extend my sincere appreciation to all keynote speakers, delegates, authors, reviewers, and participants. I am confident that the deliberations and interactions over these three days will inspire new ideas, strengthen research partnerships, and contribute to a more sustainable and technology-driven future.

I wish the conference every success and all participants a productive and enriching experience.

Mr. L. Subramaniam
Chief Executive Officer (CEO)
Sam Paul Educational Trust
Puducherry

Reference No.

Date :

Message from Dhaka International University, Bangladesh:

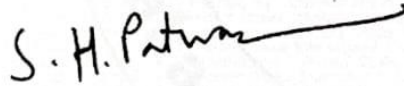
On behalf of Dhaka International University, Bangladesh, we extend our warmest greetings and heartfelt congratulations to Christ Arts and Science College, Puducherry, India, on the occasion of the Three-Day International Conference on "Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future."

This conference is a timely initiative that brings together academicians, researchers, industry experts, and students from diverse disciplines to exchange innovative ideas and foster interdisciplinary collaboration. The chosen theme reflects the growing significance of artificial intelligence in shaping sustainable development and addressing global challenges.

We are delighted to be associated with this prestigious academic event and appreciate the efforts of the organizing committee in creating a vibrant platform for knowledge sharing, research excellence, and international collaboration.

We wish the conference every success and hope that the deliberations and outcomes will inspire meaningful research, strengthen academic partnerships, and contribute to a sustainable and technology-driven future.

Best wishes for a successful conference!



Barrister Shameem Haider Patwary
Chairman, BOT
Dhaka International University
Dhaka, Bangladesh



JESUS CHRIST ARTS AND SCIENCE COLLEGE

Affiliated to Pondicherry University | A Unit of Sampaul Educational Trust

Greetings

It gives me immense pleasure to convey my heartfelt greetings and congratulations to Christ Arts and Science College on the successful organization of the Three-Day International Conference on *"Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future."*

The conference provided an excellent platform for academicians, researchers, industry experts, and students from diverse disciplines to exchange ideas, present innovative research, and explore the transformative role of Artificial Intelligence in building a sustainable future. Such academic initiatives play a vital role in fostering interdisciplinary collaboration, promoting research excellence, and advancing knowledge.

I extend my sincere appreciation to the Management, Principal, Organizing Committee, Faculty Members, keynote speakers, paper presenters, participants, and volunteers for their dedicated efforts in making this international conference a remarkable success. The publication of these conference proceedings reflects the quality of scholarly contributions and will serve as a valuable resource for researchers, educators, and students.

On behalf of Jesus Christ Arts and Science College, Puducherry, I convey my best wishes to Christ Arts and Science College for its continued commitment to academic excellence, research, and innovation. May the institution continue to inspire the academic community by organizing many more such impactful events in the years ahead.

With warm regards,



Dr. A. David Premkumar

M.Sc., M.Phil., M.Ed., APGDCA, Ph.D., MISTE

Principal

Jesus Christ Arts and Science College
Puducherry – 605502

Mobile: +91 80565 55044

Email: davidpremkumar1981@gmail.com

College Email: jesuschristpondy@gmail.com

Ramanathapuram Village, Thondamantham, Villianur Commune,
Puducherry – 605502



0413-2660702



jesuschristpondy@gmail.com



www.jesuschristpondy.com

PREFACE

Artificial Intelligence (AI) has emerged as a transformative technology, creating significant advancements in science, business, and humanities. The integration of AI-driven approaches across diverse disciplines has opened new opportunities for innovation, sustainable development, and solving complex real-world challenges.

The Three Days International Conference on “**Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future**” provides a valuable platform for researchers, academicians, industry experts, and professionals to share knowledge, exchange innovative ideas, and explore the future possibilities of AI-based solutions.

This conference proceedings book presents a collection of research contributions highlighting recent developments, emerging technologies, and interdisciplinary applications of Artificial Intelligence. The published works emphasize the role of AI in scientific advancement, business transformation, social innovation, and sustainable growth.

I sincerely appreciate the efforts of all authors, reviewers, organizing committee members, and participants for their valuable contributions towards the success of this international conference. I extend my heartfelt gratitude to **Christ Arts and Science College, Puducherry, India**, for their support and encouragement. I also express my sincere thanks to **Aarambh Quill Publications (A Unit of S-net Solutions)** for their valuable support and dedicated efforts in publishing these conference proceedings.

I hope this book will serve as a useful reference for researchers, students, academicians, and professionals interested in exploring innovative AI-driven pathways for a sustainable future.

Dr. A. Anbazhagan

Editor

Professor cum Principal

Christ Arts and Science College

Puducherry, India

CHIEF EDITOR

Dr. A. Anbazhagan
Principal
Christ Arts and Science College, Puducherry

EDITORS

Mrs. A. Yamunavathi
Academic Coordinator
Christ Arts and Science College, Puducherry

Dr. S. Bastin Britto
Dean, School of Science
Christ Arts and Science College, Puducherry

Mr. G. Rajakumar Marechal
Dean, School of Arts (i/c)
Christ Arts and Science College, Puducherry

Mr. Pradap R
Head (i/c), Department of Commerce
Christ Arts and Science College, Puducherry

Mr. G. Kalaiahasan
Head, Department of Management Studies
Christ Arts and Science College, Puducherry

Dr. B. Suma Suresh
Head, Department of English
Christ Arts and Science College, Puducherry

Mrs. S. Nandhini
Head (i/c), Department of Commerce (PA)
Christ Arts and Science College, Puducherry

Mrs. S. Ramya
Head (i/c), Department of Computer Application
Christ Arts and Science College, Puducherry

Mrs. D. Bharathi
Head (i/c), Department of Chemistry
Christ Arts and Science College, Puducherry

SUB EDITORS

Mrs. P. Aiswariya
Asst. Professor of Computer Application
Christ Arts and Science College, Puducherry

Ms. A. Kumudha
Asst. Professor of Computer Science
Christ Arts and Science College, Puducherry

Ms. M. Sevvanthi
Asst. Professor of Commerce
Christ Arts and Science College, Puducherry

Mrs. A. Indhu
Asst. Professor of Commerce
Christ Arts and Science College, Puducherry

INSTITUTE PROFILE

Christ Arts and Science College (CASC), Puducherry, is a reputed higher education institution dedicated to academic excellence, innovation, and holistic development. The institution aims to provide quality education by creating an environment that promotes knowledge creation, research excellence, skill development, and ethical values among learners.

With a strong commitment to interdisciplinary education, the college offers diverse academic programmes and encourages students and researchers to explore emerging fields through innovative learning practices. The institution focuses on nurturing creativity, critical thinking, leadership qualities, and professional competencies required to meet the challenges of a rapidly evolving global society.

Through various academic initiatives, research activities, seminars, workshops, and collaborative programmes, Christ Arts and Science College promotes a culture of continuous learning and innovation. The institution strives to strengthen the connection between education, research, industry, and society by encouraging meaningful contributions towards sustainable development.

ABOUT THE CONFERENCE

The Three-Day International Conference on “Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future” provides a global platform for academicians, researchers, industry experts, professionals, and students to share knowledge, exchange innovative ideas, and discuss the transformative role of Artificial Intelligence in various domains.

The conference focuses on exploring the integration of Artificial Intelligence with science, business, and humanities to address contemporary challenges and develop sustainable solutions. It highlights emerging advancements in intelligent technologies, digital transformation, research innovation, and human-centered approaches.

The event encourages interdisciplinary collaboration and provides opportunities for participants to present their research contributions, establish academic networks, and explore future directions in AI-driven innovation. The conference proceedings represent valuable research outcomes and ideas that contribute towards technological advancement and societal progress.

CONFERENCE THEME

“Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future”

Artificial Intelligence has emerged as a transformative force that is reshaping research, industries, and human experiences. The effective integration of AI with scientific knowledge, business strategies, and humanities perspectives creates new possibilities for innovation, sustainability, and inclusive growth.

The conference theme emphasizes the importance of responsible AI adoption and interdisciplinary collaboration in developing solutions that benefit society. By connecting technological progress with human values and sustainable practices, AI can play a significant role in addressing global challenges and creating a smarter future.

This conference aims to inspire researchers, professionals, and innovators to explore new AI-driven pathways that promote scientific advancement, economic development, social well-being, and a sustainable future for generations to come.

**Social Support Mechanisms
as Predictors of Psychological Well-being, Cross-Cultural Adjustment, Job Satisfaction,
and Employee Retention among Indian Expatriates in the Sultanate of Oman:
An Empirical Study**

Dr. A. Anbazhagan¹, Ms. A. Yamunavathi²

¹Principal, Christ Arts and Science College, Puducherry, India.

²Assistant Professor, Department of Business Administration, Christ Arts and Science
College, Puducherry, India.

E-mail: searchanbu@gmail.com¹, yamuportal@gmail.com²

Abstract

The Sultanate of Oman hosts a substantial Indian expatriate workforce that contributes significantly to its economic development across sectors such as education, healthcare, engineering, construction, information technology, and business. Despite their valuable contributions, Indian expatriates often encounter challenges related to cultural adaptation, workplace integration, psychological stress, homesickness, and uncertainty regarding long-term career prospects. Social support mechanisms—including organisational support, supervisor support, co-worker support, family support, community networks, and digital social connections—play a crucial role in facilitating successful expatriate adjustment and enhancing overall well-being.

This study aims to investigate the influence of social support mechanisms on psychological well-being, cross-cultural adjustment, job satisfaction, and employee retention among Indian expatriates working in the Sultanate of Oman. The study proposes that cross-cultural adjustment mediates the relationship between social support mechanisms and employee outcomes. A quantitative research design will be employed using structured questionnaires administered to Indian expatriates across various employment sectors in Oman. Data will be analysed using Structural Equation Modeling (SEM) to validate the proposed conceptual framework.

Keywords: Social Support Mechanisms, Psychological Well-being, Cross-Cultural Adjustment, Job Satisfaction, Employee Retention, Indian Expatriates, Oman, Human Resource Management.

The Role of Artificial Intelligence in Transforming Talent Management Practices

PRADAP R

Assistant Professor and Head
Department of Business Administration
Christ Arts and Science College
E-mail: pradappdy@gmail.com

Abstract

Artificial Intelligence (AI) is transforming organizational practices by enabling smarter, faster, and more data-driven decision-making across human resource functions. Talent management, which encompasses talent acquisition, employee development, performance management, employee engagement, succession planning, and retention, has become one of the key areas benefiting from AI-driven technologies. Organizations are increasingly adopting AI-powered tools such as machine learning algorithms, predictive analytics, intelligent chatbots, and generative AI to streamline recruitment, personalize learning and development, identify high-potential employees, predict employee turnover, and support strategic workforce planning. These technologies not only improve operational efficiency but also enhance employee experience and organizational competitiveness.

This paper examines the role of Artificial Intelligence in transforming talent management practices and explores its impact on organizational performance. The study adopts a conceptual research approach based on an extensive review of recent literature, industry reports, and scholarly publications. It highlights the major applications of AI across different stages of the talent management process while discussing the associated benefits, including improved decision-making, reduced recruitment time, enhanced employee engagement, personalized career development, and better retention strategies. The paper also addresses the challenges related to AI adoption, such as algorithmic bias, data privacy, ethical concerns, implementation costs, and the need for human oversight in decision-making.

Keywords: Artificial Intelligence, Talent Management, Human Resource Management, AI in HR, Employee Engagement, Talent Acquisition, Employee Development, Performance Management, Employee Retention.

Human–AI Collaboration in Education: Reimagining Teaching and Learning

Prof. G. Rajkumar Marechal¹, Prof. R. Veerappan²

¹Dean – School of Arts, Christ Arts & Science College, Puducherry, India.

²Associate Dean & Head, Department of Business Administration, Sacred Heart College
(Autonomous), Tirupattur, Tamil Nadu, India.

Abstract

Artificial Intelligence (AI) has played a vital role as a transformative technology in education by enabling personalized learning, intelligent tutoring, automated assessment, and data-driven instructional practices. AI helped the students to learn more from their own place itself and also support the teachers in designing adaptive learning. Ethical, Privacy, algorithmic and academic integrity are the benefits of AI. Ai is very much powerful tool and also sound pedagogical principles rather than replacing learning.

Keywords: Artificial Intelligence, Learning, Pedagogy, Personalized Learning, Intelligent Tutoring Systems, Educational Technology

ARTIFICIAL INTELLIGENCE IN LANGUAGE, LITERATURE, AND DIGITAL COMMUNICATION: TRANSFORMING TEACHING, RESEARCH, AND HUMAN INTERACTION

Dr. B. Suma Suresh

Assistant Professor, Department of English, Christ Arts and Science College, Moolakulam,
Puducherry, India.

E-mail: soniasuma7@gmail.com

Abstract

Artificial Intelligence (AI) has emerged as a transformative force across the disciplines of language, literature, and digital communication. AI-powered technologies, including Natural Language Processing (NLP), Machine Learning (ML), Large Language Models (LLMs), and intelligent virtual assistants, have significantly influenced language teaching, literary research, content creation, and online communication. These technologies enhance personalized learning, facilitate multilingual communication, support computational literary analysis, and improve the efficiency of digital interactions. At the same time, AI raises important ethical concerns related to academic integrity, copyright, algorithmic bias, misinformation, and data privacy. This paper explores the multifaceted role of AI in language education, literary studies, and digital communication through a qualitative review of contemporary scholarly literature. It examines the opportunities, challenges, and future implications of AI in the humanities while emphasizing the continued importance of human creativity, critical thinking, and ethical responsibility. The study concludes that AI should function as a complementary tool that strengthens research, teaching, and communication rather than replacing human intellectual engagement.

Keywords:

Artificial Intelligence, Language Learning, Literature, Digital Communication, Natural Language Processing, Digital Humanities.

**GENERATIVE ARTIFICIAL INTELLIGENCE AND LARGE LANGUAGE
MODELS: TRANSFORMING HIGHER EDUCATION, RESEARCH, AND DIGITAL
COMMUNICATION**

Ms. Rouvier Praveena Marie

Assistant Professor, Department of English, Christ Arts and Science College, Moolakulam,
Puducherry, India.

E-mail: praveenajerush@gmail.com

Abstract

Generative Artificial Intelligence (GenAI) and Large Language Models (LLMs) have significantly transformed education, research, and digital communication. Powered by deep learning and transformer architectures, LLMs such as GPT, Gemini, Claude, and LLaMA generate human-like text, support multilingual communication, and facilitate content creation. In higher education, these technologies enhance teaching, personalized learning, academic writing, and research productivity. However, their rapid adoption raises ethical concerns, including plagiarism, bias, misinformation, privacy, and academic integrity. This paper explores the evolution of Generative AI and LLMs, their applications in higher education and research, opportunities and challenges, ethical considerations, and future directions. It argues that responsible integration of AI, supported by institutional policies and AI literacy, can improve educational quality while preserving critical thinking and academic ethics.

Keywords:

Generative AI, Large Language Models, Artificial Intelligence, Higher Education, Academic Writing, Digital Communication, Ethics.

GENERATIVE ARTIFICIAL INTELLIGENCE AND LARGE LANGUAGE MODELS: CONCEPTS, APPLICATIONS, CHALLENGES, AND FUTURE DIRECTIONS

Ms. M. Santhiya

Assistant Professor, Department of English,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: santhiyasathz@gmail.com

Abstract

Artificial Intelligence (AI) has experienced remarkable progress over the past decade, with Generative Artificial Intelligence (Generative AI) emerging as one of the most significant technological innovations. Unlike conventional AI systems that primarily analyze and classify data, Generative AI is capable of creating original content, including text, images, audio, video, software code, and synthetic data. A major breakthrough within Generative AI is the development of Large Language Models (LLMs), which utilize transformer-based deep learning architectures to understand, interpret, and generate human-like language. These models have revolutionized various sectors by improving productivity, supporting decision-making, automating routine tasks, and enhancing human-computer interaction. Applications of Generative AI and LLMs span education, healthcare, finance, business, scientific research, software development, and public administration. Despite their transformative potential, these technologies raise important concerns related to bias, misinformation, privacy, intellectual property, cybersecurity, and ethical governance. This review paper examines the evolution of Generative AI and Large Language Models, their underlying concepts, major applications, benefits, challenges, ethical considerations, and future research directions. The study is based on secondary data collected from peer-reviewed journals, books, conference proceedings, and reports published between 2022 and 2026. The review concludes that while Generative AI and LLMs offer unprecedented opportunities for innovation and efficiency, their responsible development and deployment require robust governance frameworks, transparency, fairness, and human oversight. Continued research is essential to maximize their societal benefits while minimizing associated risks.

Keywords:

Artificial Intelligence, Generative AI, Large Language Models, Natural Language Processing, Deep Learning, Transformer Architecture.

A STUDY ON ARTIFICIAL INTELLIGENCE IN MARKETING ANALYTICS: TRANSFORMING CONSUMER BEHAVIOR AND BUSINESS DECISION-MAKING

Mrs. S. Nandhini

Head, Assistant Professor, Department of Professional Accounting,
Christ Arts and Science College, Puducherry, India.

E-mail: nandhinisashvi@gmail.com

ABSTRACT

The creation of Artificial Intelligence (AI) has changed the marketing industry in a dramatic way, as it has changed how companies gather, analyze, and use consumer data, which they need to put together their marketing strategies. Throughout history, marketing analytics was based on past sales data and different analytical methods but with the appearance of AI, it began to involve large amounts of data, both structured and unstructured ones. There are various technologies that AI is composed of used for marketing analytics such as machine learning, deep learning, natural language processing, predictive analytics, computer vision, and generative AI, which allow marketers not only to receive information about consumer needs and behavior patterns but also predict customers' buying intentions. Though these advantages are great, the growing reliance on artificial intelligence presents serious issues. There are risks associated with data privacy, cybersecurity, bias in algorithms, transparency and explanation of what is done with personal data, as well as the ethical use of consumers' information, which, among other things, affects consumer confidence and compliance with regulations. Thus, it is necessary to achieve the balance between technological advancement and responsible governance of AI, which helps to make sure that AI is being used in a fair, responsible and protective way. All in all, the study shows that AI is a truly revolutionary force in marketing analytics and consumer behavior. Proper usage of AI helps organizations to gain deeper insights into the preferences and needs of the target customers and make better business decisions.

KEYWORDS

Artificial Intelligence (AI), Marketing analytics, Consumer behavior, Real-time intent, Predictive and prescriptive analytics, Customer lifetime value (CLV), Churn prediction, Hyper-personalization, AI-based agents.

**The Impact of Behavioural Biases on Cryptocurrency and Stock Investment Decisions:
An Empirical Study of Young Investors**

Ms. M. Sevvanthi

Assistant Professor, Department of Commerce,
Christ Arts and Science College, Puducherry, India.

E-mail: Sevvanthimanicam21@gmail.com

Abstract

This study examines how behavioural biases affect cryptocurrency and stock investment decisions among young investors. It investigates how psychological factors such as overconfidence, herd behaviour, loss aversion, anchoring, and availability bias shape investment choices in both traditional and digital financial markets. The researchers used a quantitative approach, collecting primary data from 100 young investors through a structured questionnaire, along with secondary data from journals and reports. The findings show that behavioural biases have a significant impact on investment decisions, especially in cryptocurrency markets because of their higher volatility. The study highlights the need for financial literacy and rational decision-making to improve investment outcomes for young investors.

Key words: Finance, Cryptocurrency, Financial market, stock, Investments, Behavioural biases

**AI-Driven Decision Making: Bridging Business Strategy, Human Values, And
Sustainable Innovation”**

Ms. P. Harini

Assistant Professor, Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: hariniparthasarathy25@gmail.com

ABSTRACT

Artificial Intelligence (AI) is changing just how organizations make decisions by combining data-driven visions with human-centered methods. This paper looks at how AI-driven decision-making can link business strategy, human values, and sustainable innovation to create permanent societal and economic benefits. In today’s digital age, businesses increasingly practice AI technologies to enhance efficiency, predict market trends, and optimize their operations. However, just having technology is not sufficient for sustainable growth. We also need to consider ethics, social responsibility, and human well-being in AI systems. The study highlights the need towards balance automation with human judgment to make sure transparency, fairness, and inclusivity in decision-making. It also discovers how collaboration stuck between business, science, and the humanities can boost responsible innovation and sustainable development. Using examples from fields like healthcare, education, finance, and environmental management, the paper shows how AI can help solve global complications while keeping human values at the center. The findings point out that AI-driven strategies, when guided by ethical principles and sustainability goals, can help build resilient organizations, empower communities, and lead to a more inclusive and sustainable future.

Keywords: Artificial Intelligence (AI), AI-Driven Decision Making, Business Strategy, Sustainable Innovation, Human Values, Ethical AI, Digital Transformation, Sustainable Development, Human-Centered AI, Interdisciplinary Collaboration, Responsible Innovation, Organizational Sustainability.

THE ROLE OF ARTIFICIAL INTELLIGENCE IN BUSINESS STRATEGY

Ms. A. Indhu

Assistant Professor, Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: indhuyuva9@gmail.com

Abstract:

Artificial intelligence (AI) is a disruptive technology which allow an organization to transform large amount of data to intelligent decision making to formulate business strategy. Nowadays, the volume of structured and unstructured data collected by any business organizations is enormous. The conventional method of decision making no longer remains to be efficient due to this enormous quantity of data. With the help of AI based technology like machine learning, deep learning, natural language processing and predictive analytics, companies are now able to analyze and explore large scale of data, detect complex patterns and make accurate market forecast, ultimately support data driven strategic decision making. This paper discusses the role of AI in business strategy and it looks at the practical implementation of AI in customer relationship management, supply chain management, financial forecasting, marketing, and risk management. The paper discusses how the use of AI can help business organizations in gaining competitive advantage through real time decision making process, improved agility, innovative business solution and operational efficiency. Despite its numerous benefits, there are number of challenges that can be faced in the process of implementing AI technology in any business organizations. These include: data privacy issue, algorithmic bias, security and ethic, lack of human capital. However, the implementation of AI needs the collaboration of technological capabilities, skilled workforce and responsible and ethical decision makers. The paper conclude that AI is not a technology per se, it is a strategic resource that can transform an organization to intelligent enterprise with strategic insights leading to business success.

Keywords:

Artificial intelligence, business strategy; data-driven decision making, machine learning, predictive analytics, strategic decision-making, digital transformation,

**THE IMPACT OF DIVERSITY, EQUITY, AND INCLUSION (DEI) INITIATIVES
ON INSTITUTIONAL SUSTAINABILITY IN HIGHER EDUCATION
INSTITUTIONS: A STRUCTURAL EQUATION MODELLING APPROACH**

Ms. A. Yamunavathi

Assistant Professor, Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: yamuportal@gmail.com

Abstract

Higher Education Institutions (HEIS) are increasingly recognizing Diversity, Equity, and Inclusion (DEI) as strategic imperatives for achieving long-term institutional sustainability. This study examines the impact of DEI initiatives on institutional sustainability through the mediating role of organizational culture. Data were collected from 550 respondents representing faculty members, administrators, academic leaders, and students from selected Higher Education Institutions across Tamil Nadu, India. Structural Equation Modeling (SEM) was employed to analyze the relationships among diversity, equity, inclusion, leadership commitment, organizational culture, and institutional sustainability. The findings reveal that inclusion is the strongest predictor of DEI initiatives, while organizational culture significantly mediates the relationship between DEI initiatives and institutional sustainability. The study contributes to the growing body of knowledge linking DEI practices with sustainable institutional development and offers practical implications for policymakers and educational administrators.

Keywords: Diversity, Equity, Inclusion, Institutional Sustainability, Higher Education Institutions, Organizational Culture, Structural Equation Modeling.

AI-DRIVEN MARKETING ANALYTICS AND CONSUMER PURCHASE BEHAVIOUR: AN EMPIRICAL STUDY IN THE DIGITAL AGE

Mr. G. Kalaiarasan

Assistant Professor, Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence (AI) has revolutionized contemporary marketing by enabling organizations to collect, process, and analyze vast amounts of consumer data in real time, thereby transforming the way businesses understand and influence consumer behaviour. AI-driven marketing analytics has become a strategic tool for predicting customer preferences, personalizing marketing communications, enhancing customer engagement, and improving decision-making. As digital technologies continue to evolve, consumers increasingly rely on AI-powered recommendations, chatbots, virtual assistants, and personalized advertisements, which significantly shape their purchase decisions and brand preferences. This study aims to examine the influence of AI-driven marketing analytics on consumer purchase behaviour in the digital era by investigating the effects of AI-based personalization, predictive recommendations, customer engagement, trust, and perceived value on purchase intention and customer loyalty. A quantitative research design is adopted, employing a structured questionnaire to collect data from 500 consumers who actively engage with online shopping platforms and digital marketing channels. The collected data will be analyzed using descriptive statistics, reliability analysis, correlation analysis, and Structural Equation Modeling (SEM) to test the proposed relationships among the study variables. The findings are expected to reveal that AI-driven marketing analytics positively influences consumer purchase behaviour by enhancing personalized experiences, increasing customer satisfaction, strengthening trust, and fostering long-term customer loyalty. Furthermore, the study emphasizes the importance of ethical AI implementation, transparency, and data privacy in maintaining consumer confidence in AI-enabled marketing environments. The research contributes to the growing body of knowledge on AI and marketing by providing empirical evidence on the role of AI-driven marketing analytics in shaping consumer behaviour and offers practical implications for marketers, business managers, policymakers, and researchers seeking to develop customer-centric marketing strategies and achieve sustainable competitive advantage in the rapidly evolving digital marketplace.

Keywords: Artificial Intelligence, Marketing Analytics, Consumer Behaviour, Purchase Intention, Customer Loyalty, Personalization, Customer Engagement, Digital Marketing, Predictive Analytics.

**A Study on the Factors Affecting Employee Retention Strategies and Their Influence on
Job Satisfaction in the IT Sector, Chennai.**

Dr. Priyanka L.

Assistant Professor, Department of Master of Business Administration,
SRM Easwari Engineering College, Ramapuram, Chennai, Tamil Nadu, India.

E-mail: priyankakanthan04@gmail.com

Abstract

One of the most critical challenges faced by organizations today is retaining talented employees. Since human resources are considered the most valuable asset of any organization, the loss of skilled employees can have a significant negative impact on business performance and continuity. Many organizations have realized that retaining existing employees is more cost-effective than recruiting new personnel and investing additional time and resources in their training and development. As a result, companies are increasingly focusing their efforts, finances, and resources on designing and implementing effective employee retention strategies to sustain a productive workforce.

This study examines the various factors influencing employee retention in information technology (IT) companies located in Chennai. It also seeks to understand employees' perspectives regarding the challenges they encounter in the IT sector and to evaluate the effectiveness of the retention practices adopted by their organizations. Chennai, recognized as one of India's major IT hubs, was selected as the study area due to the large presence of IT firms serving both domestic and international markets. The IT industry in Chennai offers extensive direct and indirect employment opportunities, making it an important sector for research on employee retention.

The study follows a descriptive research design and includes 144 respondents selected from the top ten IT companies in Chennai. To ensure fair representation from different employee groups, a probability-based stratified random sampling technique was employed for selecting the participants.

Keywords: Retention, Strategies, Employees, Organisation.

Artificial Intelligence and Consumer Behaviour: Influencing Purchase Intention Towards Electric Cars for a Sustainable Future

Saravanan

Abstract

The global transition towards sustainable transportation has significantly increased the demand for Electric Vehicles (EVs), making it essential to understand the factors that influence consumers' purchase decisions. Simultaneously, Artificial Intelligence (AI) is transforming the way consumers search, evaluate, and purchase automobiles by providing personalized recommendations, predictive analytics, virtual assistants, and intelligent marketing strategies. This study aims to examine how consumer behaviour influences the purchase intention of electric cars in the context of AI-enabled decision-making and sustainable development.

The research integrates the Technology Acceptance Model (TAM) with consumer behaviour theories to investigate the impact of Perceived Usefulness, Perceived Ease of Use, Consumer Ethics, Eco-friendly Orientation, and Environmental Concern on consumers' intention to purchase electric cars. AI-driven digital marketing platforms, recommendation systems, and online consumer engagement are considered as technological enablers that influence information search, product evaluation, and purchase decisions. The study also highlights the role of sustainability awareness and environmental responsibility in encouraging consumers to adopt electric mobility.

A quantitative research approach is proposed using a structured questionnaire administered to prospective automobile consumers. The collected data will be analysed using appropriate statistical techniques to examine the relationships among the identified variables and purchase intention. The findings are expected to provide valuable insights for automobile manufacturers, policymakers, marketers, and AI-based digital platforms in designing effective consumer-centric strategies that accelerate electric vehicle adoption. The study contributes to the growing body of knowledge on AI-enabled consumer behaviour while supporting Sustainable Development Goals (SDGs) related to clean energy, responsible consumption, climate action, and sustainable cities.

Keywords : Artificial Intelligence (AI) ,Consumer Behaviour , Electric Cars ,Purchase Intention ,Technology Acceptance Model (TAM) ,Perceived Usefulness ,Perceived Ease of Use ,Consumer Ethics ,Eco-friendly Orientation ,Environmental Concern ,Sustainable Development Goals (SDGs) ,Green Mobility ,AI-driven Marketing ,Sustainable Transportation.

IMPACT OF AI-POWERED PERSONALIZED SOCIAL MEDIA ADVERTISING ON CONSUMER PURCHASE INTENTION: AN EMPIRICAL STUDY AMONG DIGITAL CONSUMERS IN TAMIL NADU

Dr. D. Elanchelian¹, Ms. K. Kalaiyarasi²

¹Assistant Professor, PG and Research Department of Commerce, T.B.M.L. College, Porayar
– 609307, Tamil Nadu, India.

²Research Scholar, PG and Research Department of Commerce, T.B.M.L. College, Porayar –
609307, Tamil Nadu, India.

ABSTRACT

The rapid development of digital technology and the increasing use of social media platforms have significantly transformed consumer purchasing behavior. Social media has become an essential marketing environment where brands communicate with consumers through engaging content, online communities, and influencer collaborations. Influencer marketing has emerged as a powerful promotional strategy because consumers often consider influencers as trusted sources of information compared with traditional advertisements. However, the effectiveness of influencer marketing depends on several factors, including influencer credibility, content quality, and perceived value.

The study aims to understand how these factors influence consumers' willingness to purchase products promoted through social media. A quantitative research approach is adopted, and primary data are collected through a structured questionnaire from social media users in Tamil Nadu. A sample of 50 respondents is considered for the study. The collected data are analyzed using percentage analysis, correlation analysis. The study focuses on three major independent variables: influencer credibility, content quality, and perceived value, while consumer purchase intention is considered as the dependent variable. Influencer credibility is measured through trustworthiness, expertise, and authenticity. Content quality is evaluated based on information value, attractiveness, and engagement level. Perceived value represents consumers' evaluation of product benefits, quality, and usefulness compared with the cost involved. The expected findings indicate that influencer credibility has a significant positive impact on consumer purchase intention because trustworthy influencers reduce consumer uncertainty and increase confidence.

Keywords: Social Media Marketing, Influencer Credibility, Content Quality, Perceived Value, Purchase Intention, Digital Marketing, Consumer Behaviour.

AN INTEGRATED FRAMEWORK OF TECHNOLOGY ADOPTION, TRUST, AND SERVICE QUALITY IN E-COMMERCE

Mr. J. Jenaugustinraj¹, Dr. D. Elanchelian²

¹Research Scholar, PG and Research Department of Commerce, T.B.M.L. College, Porayar –
609307, Tamil Nadu, India.

²Assistant Professor, PG and Research Department of Commerce, T.B.M.L. College, Porayar
– 609307, Tamil Nadu, India.

Abstract

E-commerce has transformed contemporary retail ecosystems by enabling seamless digital transactions, expanding market reach, and reshaping consumer behavior. However, sustained adoption and continued usage of e-commerce platforms depend on multiple interrelated factors, particularly technology adoption readiness, consumer trust, and perceived service quality. This study proposes an integrated framework that synthesizes these three dimensions to better explain user acceptance and continued engagement in e-commerce environments.

The framework draws from established theoretical foundations such as the Technology Acceptance Model (TAM), Trust Theory, and Service Quality (SERVQUAL) dimensions to examine how perceived usefulness, perceived ease of use, reliability, responsiveness, assurance, and empathy collectively influence consumer trust and adoption intentions. In this integrated model, technology adoption acts as the foundational driver, service quality functions as a reinforcing mechanism, and trust serves as the mediating construct that links system performance with behavioral intention.

The study emphasizes that even technologically advanced platforms may fail to achieve sustained user engagement if trust is compromised or if service quality expectations are not met. Conversely, high service quality enhances trust, which in turn strengthens adoption behavior and long-term loyalty. The proposed framework highlights the dynamic interplay among these constructs and provides a holistic understanding of consumer decision-making in digital marketplaces.

Keywords

E-commerce adoption; Technology Acceptance Model; Consumer trust; Service quality; SERVQUAL; Digital platforms; User behavior; Online retail; Perceived usefulness; Customer satisfaction

AI-DRIVEN APPROACHES TO ASSESSING JOB STRESS AND ITS IMPACT ON JOB SATISFACTION AMONG TEACHING FACULTY OF ARTS AND SCIENCE COLLEGES

Mrs. S. Jamuna¹, Dr. D. Elanchelian²

¹Assistant Professor, PG and Research Department of Commerce, T.B.M.L. College, Porayar
– 609307, Tamil Nadu, India.

²Assistant Professor and Research Supervisor, PG and Research Department of Commerce,
T.B.M.L. College, Porayar – 609307, Tamil Nadu, India.

ABSTRACT

Teaching faculty play a vital role in the development of higher education by shaping students' academic knowledge, skills, and professional values. The teaching profession has become increasingly demanding due to growing academic responsibilities, administrative work, research expectations, accreditation requirements, technological advancements, and continuous performance evaluations. These factors contribute significantly to job stress, which may reduce job satisfaction, affect teaching effectiveness, and ultimately influence institutional performance. In recent years, Artificial Intelligence (AI) has emerged as an innovative solution for identifying, assessing, and predicting workplace stress through intelligent data analysis and predictive analytics.

The present study examines the impact of job stress on job satisfaction among teaching faculty working in Arts and Science Colleges using AI-driven approaches. The study aims to identify the major factors causing occupational stress, measure the level of job satisfaction, and explore the usefulness of AI in monitoring employee well-being. Primary data were collected from 25 teaching faculty members through a structured questionnaire using convenience sampling. The collected data were analyzed using percentage analysis, mean score analysis, simple tabulation, and graphical representation.

Keywords: Artificial Intelligence, Job Stress, Job Satisfaction, Teaching Faculty, Higher Education, Work-Life Balance, Occupational Stress

Reimagining HR Analytics and Talent Management for a Sustainable, AI-Powered World

Ms. Nekitha P.

MBA, Easwari Engineering College, India.

E-mail: nekitha11eco@gmail.com

Abstract

Artificial intelligence is increasingly used across the employee lifecycle, from recruitment through retention, and this shift is changing how organizations manage talent. This paper reviews how predictive analytics, machine learning, and natural language processing are being applied in HR analytics and talent management, and considers the risks that come with wider adoption, particularly algorithmic bias, reduced transparency, and the erosion of employee privacy. Based on a review of recent literature and organizational practice, we propose a Human-Centric AI-Enabled Talent Management (HCAITM) framework built around five principles: strategic alignment, ethical design, interdisciplinary collaboration, continuous learning, and sustainable impact measurement. We argue that the organizations most likely to benefit from AI in HR are not those that automate the most processes, but those that pair analytical capability with deliberate ethical oversight and genuine attention to employee experience. The paper concludes with practical recommendations for HR practitioners and researchers seeking to implement AI responsibly.

Keywords: HR Analytics, Talent Management, Artificial Intelligence, Predictive Analytics, Sustainable HRM, Ethical AI, Workforce Innovation

AI-Driven Skill Development for Enhancing Graduate Employability: An Empirical Study among Management Students

Dr. Goldyn Abric Sam S. M.

Assistant Professor, Department of Management Studies,
Easwari Engineering College, Chennai – 600089, Tamil Nadu, India.

Abstract

Artificial Intelligence (AI) is beginning to change higher education and the world job market by changing the expectations of graduates and the skills they will need to be successful. To boost the employability of their students, universities are embedding AI learning platforms, intelligent tutoring systems, virtual simulations, and generative AI into teaching and learning. However, there is a lack of data on the impact of AI skill development on the employability of graduates, especially in Indian higher education.

This study attempts to identify the impact of AI skill development on the employability of graduates. Using a structured survey with five elements of AI Learning Competency, Digital Skills, Critical Thinking, Career Readiness, and Graduate Employability, the researcher is going to collect data from MBA students of various higher educational institutes. The study will adopt a quantitative research approach and use convenient sampling. The collected data will be analyzed using SPSS by conducting reliability, exploratory factor, and correlation analyses, as well as multiple regression and structural equation modeling.

This research will show that the use of AI in learning has the potential to improve a graduate's use of digital skills, critical thinking, career readiness, as well as employability. For members of academia and industry, this research will have a focus on the need to update the curriculum to include AI-based experiential learning. This research will add to the current literature of the AI in higher education and employability frameworks in their integration.

Keywords: Artificial Intelligence, Employability, Graduate Skills, Digital Learning, MBA Students, Career Readiness

A Conceptual Cybersecurity Resilience Framework for Technology-Driven Startups: Integrating Emerging Technologies, Organizational Capabilities, and Sustainable Innovation

Dr. Anand Shankar Raja M.¹, Mr. Vinson Jos Kunnankada²

¹Associate Professor, ISBR Business School, Bangalore, Karnataka, India.

²FPM Research Scholar, ISBR Business School, Bangalore, Karnataka, India.

E-mail: dr.anandmanivannan@isbr.in¹, vinsonjos@gmail.com

Abstract

The rapid adoption of emerging technologies has transformed startup ecosystems by enabling innovation, scalability, and digital transformation across industries. Technologies such as Artificial Intelligence (AI), Blockchain, the Internet of Things (IoT), Cloud Computing, and Quantum Computing have become integral to modern startup business models. However, these technologies simultaneously introduce complex cybersecurity challenges that traditional enterprise-oriented security frameworks fail to address adequately. Startups operate under conditions characterized by limited financial resources, evolving organizational structures, rapid technological deployment, and increasing dependence on interconnected digital infrastructures. Consequently, cybersecurity has evolved beyond a technical concern to become a strategic determinant of organizational resilience and sustainable innovation. This conceptual article synthesizes existing literature to develop an integrated cybersecurity resilience framework specifically designed for technology-driven startups. Drawing upon socio-technical systems theory, the Resource-Based View (RBV), Dynamic Capability Theory, and organizational resilience literature, the proposed framework explains how emerging technology adoption influences cybersecurity threat exposure while organizational capabilities and external regulatory environments shape cybersecurity preparedness. The framework positions cybersecurity preparedness as a strategic capability that transforms technology-related vulnerabilities into organizational resilience without constraining innovation. The proposed model contributes to the cybersecurity and entrepreneurship literature by providing a startup-oriented conceptual framework that integrates technological, organizational, and environmental dimensions into a unified model suitable for empirical validation. The framework further offers practical guidance for startup founders, investors, incubators, and policymakers seeking to strengthen cybersecurity while sustaining innovation-driven growth.

Keywords: Cybersecurity, Startups, Emerging Technologies, Artificial Intelligence, Organizational Resilience, Conceptual Framework, Innovation Management

“Beyond Demographics: Developing and Validating a Consumption-Based Segmentation Model for Masstige Markets - A Pre Pilot Study with reference to Bangalore, India”

Dr. Anand Shankar Raja M.¹, Mr. Madan Gowda K. J.²

¹Associate Professor & Research Supervisor, ISBR Business School, Bangalore, Karnataka, India.

²Research Scholar, Fellow Program in Management (FPM), ISBR Business School, Bangalore, Karnataka, India.

E-mail: dr.anandmanivannan@isbr.in¹, Madan.g@isbr.in²

Abstract

The aim of this article is to create an exclusive model known as the “Consumption Based Segmentation Model” CBSM which can be used to group consumers of various categories beyond demographics. However in the field of Consumer Behaviour there are very few segmentation theories and models which are quite obsolete and very traditional. In the modern environment consumer segmentation will not work in the traditional way. Henceforth there is a need to group consumers under four major categories such as Elite, Affluent, Destitute, and Adjustable. The scope of the study restricts its scope to luxury products which are also known as the masstige products which are now quite popular among the young college students. Because the youth community prefers social validations by showcasing the brands and products they use in their day to day routine life. Young youth who fall under Generation Z Cohorts are the target population in this research study. The geographical scope of this article is restricted to the capital city of Karnataka state which is Bangalore. The livelihood in Bangalore is digital oriented and driven by brand fantasies which is the perfect destination where masstige products are preferred. Important consumer behaviour factors such as prestige perception, value consciousness, symbolic consumption, digital influence, and ethical orientation affect buying intentions and brand loyalty are examined. As a part of a doctoral research this is a pre pilot study where the researchers have collected data (N=181) respondents. Basically, the data was collected using a structured questionnaire with a five-point scale and further the collected data was analyzed using few statistical tools which include reliability analysis, descriptive statistics, correlation, regression, ANOVA, and Exploratory Factor Analysis (EFA). To test the reliability of the scale items Cronbach’s Alpha was used and the results actually show that the test items work well together (Cronbach's Alpha = 0.861) and definitely confirm strong connections between different factors.

Keywords

Masstige Marketing, Consumption-Based Segmentation, CBSM, Symbolic Consumption, Value Consciousness, Prestige Perception, Digital Influence, Ethical Orientation, Purchase Intention, Brand Loyalty, Consumer Behaviour, Emerging Markets

The Impact of Artificial Intelligence for Managing Stress among Employess working at Textile showroom in Tiruchirappalli.

Dr. S. Venkatesh¹, Dr. R. Rengarajan²

¹Assistant Professor (Selection Grade), Department of Management Studies, SRM Bharathidasan College of Engineering and Technology, Pudukkottai, Tamil Nadu, India.

²Assistant Professor, Department of Business Administration, Urumu Dhanalakshmi College, Tiruchirappalli, Tamil Nadu, India.

Abstract

Stress has become a significant problem in the retail industry due to extended work hours, high customer interaction, sales targets, physical exhaustion, and evolving job demands. Textile showroom workers in cities like Trichy face challenging conditions that involve prolonged standing, continuous customer service, handling festive rushes, maintaining displays, and meeting sales goals. These conditions lead to both physical and mental stress, impacting employees' health, job satisfaction, efficiency, and quality of service.

Lately, Artificial Intelligence (AI) has emerged as an innovative tool for supporting employee well-being and stress management. AI-driven technologies like wearable gadgets, intelligent scheduling systems, mental health chatbots, mobile wellness apps, predictive analytics, and platforms for employee feedback can detect stress signs early, track workloads, and suggest suitable interventions for stress relief

AI can assess indicators such as tiredness, attendance patterns, extra work hours, sleep quality, emotional reactions, and employee input to gauge stress levels and propose coping methods like breaks, breathing exercises, counseling, task redistribution, and wellness prompts. The integration of AI in stress management is especially relevant for textile showroom employees in Trichy, where the textile retail sector is a key source of employment and work circumstances involve prolonged standing, high workload during festive periods, customer service pressures, and repetitive duties.

AI can help showroom management systematically comprehend and address employee stress by offering timely support systems. Nonetheless, issues related to privacy, ethical handling of employee data, awareness gaps, implementation costs, and the necessity for human assistance should also be taken into account. This piece explores the significance, necessity, applications, advantages, constraints, ethical considerations, and future potential of AI in managing stress among textile showroom workers in Trichy, emphasizing how AI can function as a supportive resource for enhancing employee welfare, decreasing burnout, and fostering a healthier and more efficient work environment

Keywords

Artificial Intelligence, Stress Management, Textile Showroom Employees, Trichy City, Employee Well-being, Retail Stress, Workplace Stress, AI-based Wellness, Employee Productivity, Occupational Stress

The Butterfly Effect in HR: How small policy changes cascade through Organizations

Ms. Surudhi M.¹, Dr. A. Celina²

¹Research Scholar, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur, Tamil Nadu, India.

²Associate Professor, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur, Tamil Nadu, India.

Abstract

The Human Resource (HR) policies are frequently considered as typical administrative means that are used in modern organizations to control the behaviour of the employees and enhance efficiency. Organizations are complex and interconnected systems in which any small interventions may lead to the establishment of massive and unforeseen outcomes. Relying on such a notion as the butterfly effect that emphasizes sensitivity to initial conditions and non-linear results, the paper focuses on the possibility of impacting employee attitudes, behaviours, and the overall performance by using changes in HR policies as the launching point. By applying a conceptual approach, the research incorporates knowledge in human resource management, organizational behaviour and complexity theory as to why seemingly trivial HR-related choices can lead to wide-reaching consequences. The article explains how small changes in such policies as performance appraisal, attendance, flexibility in the workplace, or on boarding can change employee perceptions on whether they are treated fairly, trusted, and supported by the organization. These changes in perception usually initiate behavioural reactions that disseminate through teams, influencing motivation, team work, involvement, and company culture. Using illustrative scenarios, the study will also show the negative and positive cascading effects of well-intended HR interventions that may at times result in stress, resistance, or disengagement and, conversely, carefully planned changes that may result in commitment, innovation, and a favourable working environment. This paper will contend that the linear methods of HR decision-making are inappropriate in complicated organizational contexts and the necessity of a systems-thinking approach. The study has identified the significance of mindful policymaking to facilitate sustainable organizational results by identifying the butterfly effect of HR.

Keywords:

Butterfly Effect, Human Resource Management, HR Policies, Organizational Change, Complexity Theory.

Ethical Imperatives in Marketing: Privacy Protection, Trust-Building, and Loyalty Formation

Mr. G. Raveen Kumar¹, Dr. Shyamaladevi Balakrishnan²

¹Research Scholar, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur – 603203, Tamil Nadu, India.

²Associate Professor, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur – 603203, Tamil Nadu, India.

E-mail: rg8457@srmist.edu.in¹, shyamalb@srmist.edu.in²

Abstract

The rise of digital technologies has changed the way marketing is practiced; however, it has also created new ethical challenges that affect consumer wellbeing and trust in organizations. The issues such as unauthorized data sharing and manipulation through algorithms have become major concerns for researchers, regulators, and professionals. This paper examines the ethical side of modern marketing, focusing on three key areas such as protecting consumer privacy, building trust, and sustaining customer loyalty. Using insights from the Theory of Planned Behaviour, Social Contract Theory, and Stakeholder Theory, the study reviews recent literature and identifies an important gap: the lack of a clear framework that explains how privacy protection leads to long-term loyalty through the role of trust. To address this, the paper proposes a conceptual model where trust acts as the bridge between privacy and loyalty. It argues that transparent and ethical marketing practices are essential for building strong and lasting consumer relationships. The model offers practical and theoretical value for marketers, policymakers, and academics working in data-driven environments, showing how ethical approaches can strengthen both consumer engagement and organizational credibility.

Keywords: Marketing Ethics, Consumer Privacy, Digital Marketing, Artificial Intelligence, Consumer Trust

DIGITAL TRANSFORMATION IN PERSONAL FINANCE: THE IMPACT OF FINTECH AND FINANCIAL LITERACY ON FINANCIAL PLANNING

Ms. Jayatharshanya D.¹, Dr. A. R. Shanmuga Priya²

¹Research Scholar, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur, Tamil Nadu, India.

²Associate Professor, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur, Tamil Nadu, India.

Abstract

The fast pace of digitalisation in financial services has changed the way people access, manage and plan their personal finances. Digital wallets, UPI-based transactions, robo-advisory platforms and mobile banking applications are some of the financial technology (FinTech) innovations that have brought formal financial services within easy reach of customers far beyond the geographical confines of traditional branch banking. Yet, the extent to which this digital revolution results in sound financial planning behaviour is dependent on a little-known variable: financial literacy. This paper synthesises recent literature on FinTech adoption, digital financial literacy and financial well-being to develop a conceptual framework where financial literacy moderates the relationship between FinTech adoption and financial planning behaviour with financial confidence as a mediating mechanism. This paper presents a multi-construct model and a set of theoretical propositions that can be empirically tested, and are based on the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), the OECD/INFE financial literacy framework and behavioural finance theory. This paper contributes to the emergent discourse on digital financial capability, and offers implications for policy makers, financial institutions and educators who are trying to convert digital access into true financial well-being.

Key words: Digital Transformation; FinTech; Financial Literacy; Financial Planning; Financial Inclusion; Financial Wellbeing.

Quiet Quitting: The Silent Assassin of Organizational Performance

-A Conceptual Model

Ms. Durgha B.¹, Dr. Nisha Ashokan²

¹Research Scholar, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur, Tamil Nadu, India.

²Professor, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur, Tamil Nadu, India.

Abstract

In the post-pandemic workplace, quiet quitting has emerged as a defining phenomenon, referring to employees who withdraw discretionary effort while remaining formally employed. This withdrawal is not only different from overt turnover, it is also largely invisible to conventional HR metrics, allowing productivity erosion to accumulate unnoticed until it shows up as a measurable drop in performance. In this paper, we present a conceptual model that views quiet quitting as a silent, cumulative threat to organisational performance rather than a solitary individual attitude problem. Based on Psychological Contract Theory, the Job Demands-Resources (JD-R) model, and Conservation of Resources theory, the paper argues that quiet quitting originates in perceived contract breach and chronic resource depletion and propagates through three interlinked pathways: reduced organisational citizenship behaviour, contagion effects within teams, and erosion of institutional knowledge transfer. We propose a multi-level conceptual framework linking antecedents (leadership style, workload intensity, recognition gaps, generational expectations), mediating psychological states (disengagement, cynicism, reduced felt obligation) and organizational-level outcomes (productivity lag, innovation slowdown, customer experience decline, talent brain-drain). The paper also makes the case that the danger of quiet quitting is the very ambiguity it entails: it bypasses exit interviews, engagement surveys with lagging cadence, and disciplinary triggers, making it structurally more difficult to diagnose than absenteeism or attrition. We recommend organisational design responses across four levers — job redesign, recognition architecture, psychological contract renegotiation and manager capability building. The paper concludes with a set of testable propositions and an agenda for future empirical validation using multi-source, longitudinal designs. This conceptualisation advances HR theory by repositioning quiet quitting as a systemic indicator of organisational health, rather than as a personal motivation deficit.

Keywords: quiet quitting, disengagement, psychological contract, JD-R model, organisational performance, employee withdrawal

"AI Integration in Cold Chain Efficiency":

A study on sustainable evolution of cold chain

V. Arjun¹, Sidhart B.²

¹MBA in Logistics and Supply Chain Management, Pondicherry University, Puducherry, India.

²MBA in Logistics and Supply Chain Management, Pondicherry University, Puducherry, India.

ABSTRACT

The cold chain plays a vital role in preserving the quality and safety of temperature-sensitive products such as food, medicines, vaccines, and chemicals. However, many cold chain systems still experience problems such as temperature fluctuations, delayed deliveries, equipment failures, high energy consumption, and product spoilage. These challenges lead to financial losses and reduce customer trust. Artificial Intelligence (AI) offers a promising solution by making cold chain operations more efficient, reliable, and sustainable.

This paper explores how AI can improve cold chain efficiency through technologies such as predictive analytics, machine learning, smart sensors, and real-time monitoring. AI helps organizations predict equipment failures before they occur, optimize transportation routes, monitor storage conditions continuously, and maintain the required temperature throughout the supply chain. These capabilities reduce product wastage, improve inventory management, lower operational costs, and increase customer satisfaction. AI also supports sustainability by reducing energy consumption and minimizing carbon emissions through better resource utilization.

The study highlights the practical applications, benefits, and challenges of AI adoption in cold chain logistics, including investment costs, data security, and the need for skilled professionals. It also discusses future opportunities for integrating AI with Internet of Things (IoT) devices and digital technologies to build smarter and more resilient cold chain networks. Overall, AI has the potential to transform traditional cold chain systems into intelligent, efficient, and environmentally responsible supply chains that meet the growing global demand for safe and high-quality products.

Keywords :

- 1) Artificial Intelligence (AI) 2) Cold Chain Logistics 3) Supply Chain Efficiency 4) Predictive Analytics 5) Internet of Things (IoT) 6) Sustainable Logistics.

Artificial Intelligence-Driven Operational Excellence in Quick Commerce: A Conceptual Framework for Sustainable Last-Mile Logistics

Ms. Thenmozhi V.¹, Dr. Jahira Parveen S.²

¹Research Scholar, Faculty of Management, SRM Institute of Science and Technology,
Chennai, Tamil Nadu, India.

²Assistant Professor, Faculty of Management, SRM Institute of Science and Technology
(SRMIST), Chennai, Tamil Nadu, India.

Abstract:

Quick commerce has shrunk delivery times in urban India's last-mile delivery to between 10 and 30 minutes, putting a lot of pressure on the systems that couriers use to plan routes, dark stores and delivery networks. AI is now widely embedded in quick commerce operations – from predictive demand forecasting, dynamic route optimisation and intelligent courier allocation to automated micro-fulfilment. But the cumulative contribution of AI to operational excellence, and in turn to environmentally, economically and socially sustainable last-mile outcomes, is still conceptually underdeveloped. The paper develops an integrated conceptual framework that connects AI-driven capabilities to operational excellence (speed and reliability of delivery, cost efficiency, resource utilisation, and quality of service) and through this mediating construct to sustainable last-mile logistics outcomes from a triple-bottom-line perspective. This paper argues that AI is a dynamic capability that enables fast commerce firms to sense demand volatility, seize efficiency gains and reconfigure delivery operations. The moderating effects of organisational AI readiness and digital infrastructure maturity are examined based on Dynamic Capabilities Theory, the Resource-Based View and the Triple Bottom Line framework. Four research propositions are suggested to guide empirical validation in the future. The paper develops a theory-based model that conceptualises AI adoption in quick commerce logistics not just as an efficiency tool, but as a capability development mechanism for sustainable operational transformation, providing a research agenda for scholars and a decision lens for practitioners and policymakers in the rapidly growing quick commerce sector in India.

Keywords: Artificial Intelligence, Operational Excellence, Quick Commerce, Sustainable Last Mile Logistics, Dynamic Capabilities.

DIGITAL TRANSFORMATION OF SUPPLY CHAIN MANAGEMENT IN THE ERA OF E-COMMERCE: LOGISTICS OPTIMIZATION, TECHNOLOGY INTEGRATION, AND LAST-MILE DELIVERY PERFORMANCE

Mr. Monishkumar Baskaran¹, Dr. G. Lakshmi²

¹Research Scholar, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur, Tamil Nadu, India.

²Assistant Professor, Faculty of Management, SRM Institute of Science and Technology,
Kattankulathur, Tamil Nadu, India.

ABSTRACT

The rapid expansion of e-commerce platforms after the pandemic period such as Flipkart, Amazon, Myntra and Ajio has significantly transformed Supply Chain Management (SCM), compelling firms to redesign their operational structures to meet evolving consumer expectations for speed, transparency, and sustainability. This study examines the impact of key independent variable technology adoption, logistics optimization, and last-mile delivery effectiveness on dependent variables such as operational efficiency, customer satisfaction, and competitive advantage within e-commerce ecosystems. Although prior research has addressed digital supply chains and logistics performance, a clear research gap exists in integrating these variables into a comprehensive framework that links e-commerce growth with adaptive SCM strategies, particularly in emerging market contexts. Using a mixed-method approach that combines quantitative supply chain data analysis with qualitative case studies of leading firms, the findings indicate that organizations implementing integrated digital supply systems achieve higher efficiency, improved service performance, and stronger market positioning. However, the study is limited by its focus on selected large-scale firms, cross-sectional data, and rapidly evolving technologies that may affect the long-term applicability of the results. The research underscores the strategic importance of digital integration, collaborative logistics networks, and supply chain practices, while recommending future longitudinal and comparative studies to further validate and expand the proposed conceptual framework in diverse industry and geographic settings.

Keywords: E-commerce, Supply Chain Management, Artificial Intelligence, Logistics Optimization. operational efficiency.

BUILDING A SUSTAINABLE INNOVATION ECOSYSTEM THROUGH DIGITAL TRANSFORMATION: AN EMPIRICAL INVESTIGATION

Dr. M. Prince Rani¹, Ms. R. Subha², Ms. M. Sowmiya³

¹Assistant Professor, Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

²M.Com., Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

³M.Com., Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

E-mail: mjjprince2016@gmail.com¹, subharajendran01@gmail.com²

ABSTRACT

Digital transformation has emerged as a key enabler of sustainable innovation ecosystems by integrating advanced technologies, fostering collaboration, and enhancing organizational capabilities. This study aims to empirically investigate the role of digital transformation in building a sustainable innovation ecosystem and its impact on organizational performance. The research examines key dimensions such as digital technology adoption, innovation capability, organizational agility, knowledge sharing, stakeholder collaboration, and sustainability practices. Primary data are collected through a structured questionnaire from selected organizations, while secondary data are gathered from journals, reports, and industry publications. The collected data are analyzed using appropriate statistical techniques to identify the relationships among the study variables. The findings are expected to reveal that digital transformation significantly enhances innovation capacity, operational efficiency, and collaborative networks, thereby contributing to long-term sustainability and competitive advantage. The study provides valuable insights for business leaders, policymakers, and researchers in formulating effective digital transformation strategies that promote resilient, inclusive, and sustainable innovation ecosystems in the rapidly evolving digital economy.

Keywords: Digital Transformation, Innovation Ecosystem, Sustainability, Organizational Innovation, Digital Technologies, Sustainable Performance, Stakeholder Collaboration.

THE STUDY ON STUDENTS' PERCEPTION IN AI-ENABLED LEARNING AND ITS IMPACT ON ACADEMIC PERFORMANCE

Mr. Deepakraj K.¹, Mr. Ramajayam K.², Mr. Yuvaraj A.³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Department of Commerce, Christ Arts and Science College, Puducherry, India.

E-mail: mrdandj00@gmail.com¹, ramajayamk07@gmail.com², kgf12345kgf@gmail.com³

ABSTRACT:

Artificial Intelligence (AI) has played a significant role in modern education and assists students in enhancing their learning experience and academic achievements. This study intends to analyze the perceptions of students regarding AI-based learning and academic performance, identify the AI applications used by the students, and investigate the advantages and disadvantages of AI-based learning. The research methodology involved the adoption of the descriptive research method where the primary data was obtained from 20 participants using the structured questionnaire in Google Forms. The collected data were analyzed using the percentage analysis and mean score analysis methods. The results indicate that ChatGPT is the most widely used AI application by the students. The AI applications help the students to understand difficult concepts and prepare for examinations. Additionally, the study found out that the students have a positive perception of AI-based learning. Inaccurate information and difficulties in crafting prompts have been established as the biggest challenge. Finally, the study has concluded that AI-based learning positively impacts the academic performance of students.

Keywords: Artificial Intelligence, AI-enabled learning, Academic performance, Students' perception, Higher education.

The Impact of Sustainable Development Goals on Economic, Social, and Environmental Development in AI technology

Mr. Niranjan P.¹, Mr. Priyan D.², Mr. Kaviarasan M.³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Department of Commerce, Christ Arts and Science College, Puducherry, India.

E-mail: niruniru112007@gmail.com¹, Itspriyan123@gmail.com²,
Kaviarasank766@gmail.com³

Abstract:

The Sustainable Development Goals (SDGs), introduced by the United Nations as part of the 2030 Agenda for Sustainable Development in 2015, give the guidelines to solve global issues related to poverty, inequality, climate change, environmental destruction, peace, and justice. The 17 SDGs aim at ensuring inclusive economic growth, social development, and environmental sustainability. The present research paper describes the influence of the SDGs on the progress of economic, social, and environmental development. The major findings of the presented research show that despite the fact that significant results have been achieved, more international cooperation, investments, and integration of policies are necessary to reach the SDGs by 2030.

Keywords:

Sustainable Development Goals, SDGs, Economic Development, Social Development, Ecological Sustainability, United Nations

THE STUDY ON AI ROLE IN CYBER SECURITY AND DIGITAL PRIVACY

Ms. S. Sanjeetha¹, Ms. M. Kaviya², Ms. A. Oviya³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence (AI) has established itself as a critical resource in combating cybersecurity attacks and securing digital technology from current threats. AI allows collecting data regarding attacks much quicker and expediting the process of responding to incidents, detecting malware, thus improving the overall effectiveness of cybersecurity programs. That being said, the increasing deployment of AI causes some concerns regarding digital privacy, including how companies collect, store, and utilize private information and the issues related to surveillance and data protection in general. In this context, the current paper sets the goal of analyzing the role of AI in enhancing cybersecurity and understanding its impact on digital privacy. It describes the benefits of using AI in cybersecurity applications, thus revealing both its strengths and weaknesses that have to be considered in terms of privacy. The conclusion points out that only responsible use of AI combined with strict regulations regarding privacy and ethical aspects of operations, as well as implementing effective cybersecurity programs would help develop the environment that will respect privacy and ensure cybersecurity.

Keywords:

Artificial Intelligence (AI), Cybersecurity, Digital Privacy, Cyber Threats, Data Protection, Privacy, Machine Learning, Information Security.

A STUDY ON THE FACTORS INFLUENCING CONTINUOUS USAGE OF MOBILE WALLET APPLICATION AMONG THE COLLEGE STUDENTS

Mr. Bonpapa David¹, Mr. Sridhar²

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

E-mail: davidbonpapa01@gmail.com¹, srioofficial1308@gmail.com²

ABSTRACT

The fast growth of digital payment technologies has brought about a significant change in the financial spending behavior of customers, especially those ones who are students and use their smartphones and mobile applications quite often. The aim of this study is to analyze what influences the usage of mobile wallet applications by college students. The research is based on the following determinants: perceived usefulness, perceived ease of use, trust, security, social influence, satisfaction and promotional benefits. In the study, a quantitative research method was used with the help of a structured questionnaire. Data were gathered from college students and analyzed statistically to determine the correlation between influencing factors and students' intentions to continue using mobile wallets. The research results show that perceived usefulness, ease of use, trust, security and satisfaction have a positive influence on college students, as well as social influence and promotional offers.

KEYWORDS

Mobile Wallet, Continuous Usage, College Students, Digital Payments, Perceived Usefulness, Perceived Ease of Use, Trust, User Satisfaction, Technology Adoption.

A STUDY ON THE ROLE OF AI IN PERSONALIZING CUSTOMER EXPERIENCE IN ONLINE MARKETING

Mr. Raghavan¹, Mr. Krishna Kumar², Mr. Parameshwaran³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Department of Commerce, Christ Arts and Science College, Puducherry, India.

E-mail: Raghavandragon23@gmail.com¹, Kumar55666j@gmail.com²,
Eswaranparameshwaran7@gmail.com³

Abstract

This study looks at how Artificial Intelligence's used to make customer experiences personal in online marketing. Artificial Intelligence has changed marketing by helping businesses understand what customers do suggest products that customers might like show them ads that are relevant and make customers more engaged.. There are still problems like keeping customer data private, security issues, ethical concerns, biases in algorithms and the cost of putting Artificial Intelligence in place that affect how well Artificial Intelligence can make things personal. This study wants to know how Artificial Intelligence affects how happy customers are, how engaged they are and what they buy while also looking at the bad things about it. The study used a research plan with numbers to get the information it needed. It used information from two sources: what people said and what was already written. The study asked 100 people who shop online some questions and also read books, articles and reports from companies. The information that was collected was looked at using math and graphs. What the study found out is that Artificial Intelligence really helps make customers happy and makes them want to shop more. Artificial Intelligence can suggest products show ads and even talk to customers like a person, which is really good for business. At the time customers are worried about what happens to their personal information. The study says that companies should use Artificial Intelligence in a way. They need to be honest handle data in a way and keep customer information safe. If companies do this they can make the most, out of personalized marketing and also make customers trust them. This is important for Artificial Intelligence to really work well in making customer experiences. By using Artificial Intelligence in the way businesses can make customers happy and also do what is right.

AI IN WORKFORCE PLANNING

Mr. Raghavan¹, Mr. Krishna Kumar², Mr. Parameshwaran³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Department of Commerce, Christ Arts and Science College, Puducherry, India.

E-mail: raghavandragon23@gmail.com¹, kumar55666j@gmail.com²,
eswaranparameshwaran7@gmail.com³

Abstract:

Artificial Intelligence (AI) has become a transformative technology in workforce planning by enabling organizations to make informed, data-driven decisions regarding recruitment, employee development, performance management, and workforce forecasting. Traditional workforce planning methods often rely on historical data and manual analysis, which may not effectively address the dynamic challenges of today's business environment. AI-powered technologies, including machine learning, predictive analytics, and automation, help organizations identify future workforce requirements, reduce skill gaps, improve employee productivity, and optimize talent management strategies.

This paper examines the role of AI in workforce planning and its impact on organizational efficiency and business sustainability. It explores how AI supports human resource professionals in forecasting workforce demand, identifying high-performing employees, enhancing recruitment processes, and improving employee retention through predictive insights. The study also highlights the benefits of AI, such as increased accuracy, faster decision-making, cost reduction, and enhanced workforce productivity. Along with these advantages, the paper discusses key challenges including data privacy concerns, algorithmic bias, implementation costs, and the need for human oversight in AI-based decision-making.

The research is based on a review of existing academic literature, industry reports, and recent case studies that demonstrate the practical application of AI in workforce planning across different sectors. The findings indicate that organizations adopting AI technologies gain a competitive advantage by improving workforce agility, enhancing employee experience, and aligning human resource strategies with business objectives.

Keywords: Artificial Intelligence, Workforce Planning, Human Resource Management, Predictive Analytics, Talent Management, Recruitment, Employee Retention, Workforce Forecasting.

Artificial Intelligence in Retail Business: Transforming the Future of Retail

Mr. Pugazh

Department of Business Administration,
Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) is transforming the retail industry by improving customer experiences, enhancing operational efficiency, and increasing business profitability. AI technologies such as machine learning, predictive analytics, computer vision, and natural language processing enable retailers to understandable customer behavior, optimize inventory, automate customer service, and personalize marketing. This paper explores the applications, benefits, challenges, and future prospects of AI in the retail sector. The study concludes that AI is becoming a strategic tool for achieving competitive advantage and sustainable growth in retail businesses.

Keywords: Artificial Intelligence, Retail Business, Machine Learning, Customer Experience, Inventory Management, Automation

ENHANCING EMPLOYEE MOTIVATION THROUGH ARTIFICIAL INTELLIGENCE

Ms. M. Priyadharshini

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: priyamurugan0@gmail.com

ABSTRACT

Artificial Intelligence (AI) is transforming the workplace by changing how organizations manage and motivate their employees. Traditional methods of employee motivation are gradually being supported by AI-powered technologies that provide personalized learning, continuous performance feedback, employee recognition, and career development opportunities. These intelligent systems help organizations understand employee needs, improve communication, reduce repetitive tasks, and create a more engaging work environment.

This paper explores the role of AI in enhancing employee motivation and examines how AI-driven tools influence job satisfaction, employee engagement, productivity, and overall organizational performance. The study adopts a conceptual research approach by reviewing recent academic literature, industry reports, and existing research on AI applications in human resource management.

Keywords: Artificial Intelligence, Employee Motivation, Human Resource Management, Employee Engagement, Job Satisfaction, Workplace Innovation, Organizational Performance.

THE IMPACT OF AI ON EMPLOYEE SATISFACTION

Ms. Monika M.

Department of Business Administration,
Christ Arts and Science College, Puducherry, India.

E-mail: monikamakizhvarman11@gmail.com

ABSTRACT

The presence of Artificial Intelligence (AI) has changed the dynamics of modern organization, revolutionizing the way in which its employees interact, communicate and do work. From automating processes to aiding data-based decision-making process, AI has improved the efficiency and productivity of workplace activities in many ways. On the other hand, the impact of AI on employee satisfaction has become a significant topic of research due to efforts made by organizations to build a positive workplace amid the adoption of advanced technology. The importance of employee satisfaction becomes clear with its close linkages with motivation, engagement, performance and commitment in organizations. This paper studies the effects of AI on employee satisfaction with special emphasis on the ways in which AI helps in reducing workload, creating better work-life balance and developing learning opportunities among others. The research will also focus on some of the challenges posed by AI to organizations in relation to issues such as job security, privacy, dependence on technology and skill development among others. Descriptive research design based on secondary data will be used.

Keywords: Artificial Intelligence (AI), Employee Satisfaction, Workplace Automation, Employee Engagement, Job Satisfaction, Productivity, Work-Life Balance, Human Resource Management, Digital Transformation, Organizational Performance.

“THE STRATEGIC ORCHESTRATION OF ARTIFICIAL INTELLIGENCE IN BUSINESS DECISION-MAKING”

Mr. Aravindh S.

Department of Business Administration,
Christ Arts and Science College, Puducherry, India.

E-mail: suresharavindh2006@gmail.com

ABSTRACT

Artificial Intelligence (AI) has become a transformative force in the modern business landscape, revolutionizing the way organizations formulate strategies and make critical business decisions. By leveraging advanced technologies such as machine learning, predictive analytics, natural language processing, and intelligent automation, AI enables businesses to process vast volumes of data, generate accurate insights, and support informed decision-making. The strategic integration of AI enhances operational efficiency, optimizes resource utilization, improves customer experiences, and strengthens organizational competitiveness. This study explores the strategic orchestration of Artificial Intelligence in business decision-making, emphasizing its role in fostering innovation, enhancing strategic planning, and creating sustainable business value across various functional domains, including marketing, finance, human resource management, operations, and supply chain management. The study adopts a qualitative research approach based on secondary data collected from credible academic and industry sources. It also examines the opportunities offered by AI while addressing significant challenges such as ethical governance, data privacy, cybersecurity, algorithmic bias, transparency, and regulatory compliance. Furthermore, the paper highlights emerging developments in AI-enabled strategic management and discusses the importance of aligning technological capabilities with organizational objectives and human expertise. The findings reveal that organizations that strategically integrate Artificial Intelligence into their decision-making processes are better positioned to improve business performance, adapt to dynamic market conditions, and achieve long-term competitive advantage. The study concludes that Artificial Intelligence is not merely a technological innovation but a strategic asset that empowers organizations to make intelligent, agile, and sustainable business decisions in the evolving digital economy.

Keywords: Artificial Intelligence, Business Decision-Making, Strategic Management, Decision Intelligence, Predictive Analytics, Business Intelligence, Machine Learning, Competitive Advantage, Digital Transformation, Sustainable Business Growth.

AI FOR QUALITY MANAGEMENT

Mr. Syed Armaan A.

Department of Business Administration,
Christ Arts and Science College, Puducherry, India.

E-mail: syedarmaan516@gmail.com

Abstract:

Artificial Intelligence (AI) has emerged as one of the most significant technological innovations, transforming quality management practices across manufacturing, healthcare, logistics, retail, and service industries. Traditional quality management methods mainly rely on manual inspection, statistical analysis, and periodic quality checks. Although these methods have been effective, they are often time-consuming, prone to human error, and less efficient when dealing with large volumes of data. AI overcomes these limitations by enabling intelligent, automated, and real-time quality monitoring and decision-making. AI technologies such as Machine Learning (ML), Computer Vision, Deep Learning, and Predictive Analytics help organizations identify defects, monitor production processes, predict equipment failures, and optimize quality performance. Computer vision systems can inspect products with high accuracy, while machine learning algorithms analyze historical and real-time data to detect patterns and prevent quality issues before they occur. Predictive maintenance powered by AI minimizes machine downtime, reduces maintenance costs, and improves operational efficiency. In addition, AI supports root cause analysis, supplier quality management, and customer feedback analysis, enabling organizations to continuously improve their products and services. The adoption of AI in quality management offers several advantages, including improved product quality, reduced production costs, increased productivity, faster decision-making, enhanced customer satisfaction, and better compliance with quality standards. However, organizations also face challenges such as high implementation costs, the need for skilled professionals, concerns regarding data privacy and security, and integration with existing systems.

Keywords: Artificial Intelligence, Quality Management, Machine Learning, Computer Vision, Predictive Analytics, Quality Control, Continuous Improvement, Industry.

Artificial Intelligence for Risk Management and Fraud Detection in Business

Mr. R. Sanjai

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: sanjai2006@gmail.com

ABSTRACT

Artificial Intelligence (AI) may be utilized in diverse ways to detect threats and guarantee that fraud is minimized. The technology enables firms to analyze, process, and interpret information at an increased rate, which aids in enhancing decisions made. This is precisely why AI is considered essential for the contemporary digital economy because it can handle massive amounts of data that must be assessed to guarantee that no fraudulent activities are carried out. This paper discusses the main aspects of using Artificial Intelligence for risk management and fraud detection in the banking sector, insurance companies, e-commerce, and other business sectors. The research will also highlight how AI applications support businesses with the ability to make appropriate, data-driven decisions. The study will demonstrate that, despite numerous challenges associated with the application of AI technologies, they are beneficial for analyzing and predicting emerging issues in different areas of business. Modern businesses operate in a highly competitive environment where they are forced to use all available tools to gain an advantage over their rivals. One of such advantages is represented by the ability to make timely and accurate forecasts of possible risks and detect fraudulent activities. This paper concludes that the concept of artificial intelligence (AI) is changing corporate risk management and fraud detection. The research showed that with the right combination of modern technologies and human intellect, businesses can protect themselves from fraud and ensure long-term profitable growth. It is critical for companies to invest in the development of artificial intelligence in the context of future cybersecurity and profit in a competitive business world.

KEYWORDS: Artificial Intelligence (AI), Risk Management, Fraud Detection, Machine Learning, Predictive Analytics, Business Intelligence, Cybersecurity, Financial Fraud, Ethical AI, Sustainable Business.

Future of AI- Enable Sustainable Supply Chain Management

Mr. B. Dharaneeswar

Department of Management Studies,
Christ Arts and Science College (Affiliated to Pondicherry University), Moolakulam,
Puducherry, India.

E-mail: dharaneeswar2607@gmail.com

ABSTRACT

Current Artificial Intelligence (AI) systems enable better and efficient choices to be made by users to build sustainable supply chains able to generate positive economic, environmental, and societal results. Given the steady rise in demand for sustainable functioning of Business processes, AI- solutions based on machine learning, predictive analytics, IoT, and automation become vital instruments allowing for better decisions and sustainability supply chains. This study will examine the function of artificial intelligence within sustainable supply chains now. Future via examining pertinent research and current sector patterns along with obstacles. Initially, This paper will discuss the advantages of artificial intelligence usage regarding performance improvement, resource improvement, reduction of carbon footprint, and optimization resilience. Next, the major difficulties of how AI applies to SCM will be detailed here. Last, this study concentrates upon the potential future developments within the domain of green supply chain operations driven by artificial intelligence. According to the analysis performed inside the paper, this specific conclusion may be drawn. Current artificial intelligence serves as a useful instrument which might help advance green logistics systems actions if good planning, careful data handling, and group dedication are present.

Keywords : Machine Learning, Artificial Intelligence, Sustainable Supply Chain Management, Predictive Analytics, Green Supply Chain, Digital Transformation.

CIRCULAR BUSINESS MODEL: A SUSTAINABLE APPROACH TO MODERN BUSINESS MANAGEMENT

Mr. M. Kumaresan

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: kumaresan962902@gmail.com

ABSTRACT

Circular Business Models (CBMs) are transforming modern businesses by replacing the traditional linear 'take-make-dispose' model with systems that emphasize resource efficiency, reuse, repair, remanufacturing, and recycling. This paper examines the concept, importance, applications, benefits, challenges, and future prospects of circular business models. It is based on secondary data from books, journal articles, and industry reports. The study concludes that CBMs enhance sustainability, improve competitiveness, reduce waste, and support long-term economic growth.

Keywords: Circular Business Model, Circular Economy, Sustainability, Resource Efficiency, Recycling, Business Innovation

Artificial Intelligence and Conflict Resolution in Organizations

Mr. S. Silvester

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

ABSTRACT

Artificial Intelligence (AI) is transforming the way organizations manage workplace relationships and resolve conflicts. As businesses become more digital and diverse, disagreements among employees may arise due to differences in communication, work styles, expectations, or resource allocation. Traditional conflict resolution methods often rely on managers or human resource professionals, which can be time-consuming and influenced by personal bias. AI-powered tools are increasingly being used to support conflict management by analyzing workplace data, identifying early signs of disputes, providing unbiased insights, and recommending suitable resolution strategies. This paper examines the role of AI in organizational conflict resolution and its impact on improving workplace harmony, employee satisfaction, and organizational performance. The study follows a descriptive research methodology based on secondary data collected from research articles, books, conference proceedings, industry reports, and reputable online sources. The review highlights that AI can enhance decision-making, reduce response time, promote fairness, and assist HR professionals in resolving conflicts more effectively. However, concerns related to data privacy, algorithmic bias, transparency, and the lack of human empathy remain significant challenges. The paper concludes that AI should not replace human judgment in conflict resolution but should serve as a supportive tool that complements the experience and emotional intelligence of managers and HR professionals. A balanced approach that combines AI capabilities with human intervention can create a healthier, more inclusive, and collaborative work environment. The findings of this study provide useful insights for researchers, HR practitioners, organizational leaders, and policymakers interested in leveraging AI for effective conflict management in modern organizations.

Keywords: Artificial Intelligence, Conflict Resolution, Human Resource Management, Workplace Conflict, Employee Relations, Organizational Performance

“Artificial Intelligence and Employee Engagement: Evidence from Digital HR Practice”

Mr. G. Mageshaaran

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

ABSTRACT

The digital transformation of human resource management has accelerated the adoption of artificial intelligence (AI) across various HR practices, including recruitment, performance appraisal, and employee development. While AI has been widely recognized for improving efficiency and accuracy in HR processes, its implications for employees' psychological outcomes, particularly employee engagement, remain underexplored. This study aims to examine the influence of artificial intelligence in digital HR practices on employee engagement. A quantitative explanatory design was employed, involving employees who actively use AI-based digital HR systems. Data were collected through a structured questionnaire and analyzed using Structural Equation Modeling–Partial Least Squares (SEM–PLS). The results indicate that artificial intelligence embedded in digital HR practices has a positive and significant effect on employee engagement. These findings suggest that AI-driven HR systems that emphasize support, personalization, and transparency enhance employees' cognitive, emotional, and behavioral engagement. This study contributes theoretically to the digital HR literature by positioning AI as a strategic driver of employee engagement and provides practical insights for organizations seeking to implement human-centered AI in HR management. Employee engagement is a critical factor that contributes to organizational success through increased productivity, job satisfaction, commitment, and employee retention. This study explores the relationship between digital HR practices and employee engagement by examining how technology-driven HR initiatives shape employees' motivation, communication, collaboration, and overall work experience.

Keywords: Artificial intelligence; engagement; digitalHR; employees; technology

AI AND EMPLOYEE WELL-BEING

Mr. P. Mohankumar

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: mohankumarp2006@gmail.com

ABSTRACT

Artificial Intelligence (AI) is transforming the modern workplace by improving the way employees perform their daily tasks, communicate, and make decisions. Organizations are increasingly adopting AI-powered tools to automate repetitive work, support decision-making, enhance learning, and improve overall productivity. While these technologies provide several benefits, they also influence employees' physical, mental, and emotional well-being. AI can reduce workload, minimize stress caused by routine tasks, and promote a better work-life balance through flexible and intelligent work systems. At the same time, concerns related to job insecurity, privacy, constant monitoring, and overdependence on technology may negatively affect employee well-being if AI is not implemented responsibly.

This paper examines the impact of AI on employee well-being by exploring both its positive and negative effects in the workplace. The study is based on a review of recent literature, research articles, industry reports, and published case studies related to AI adoption in human resource management and employee well-being. The findings indicate that organizations can achieve better employee satisfaction, engagement, and productivity when AI is used to support employees rather than replace them. Ethical implementation, transparent communication, employee training, and human-centered AI policies play a vital role in creating a healthy work environment.

The paper concludes that AI has the potential to significantly improve employee well-being when organizations maintain a balance between technological advancement and human values. The study also provides practical insights for HR professionals, managers, and policymakers to develop workplace strategies that promote both organizational performance and employee welfare in the era of artificial intelligence.

Keywords: Artificial Intelligence, Employee Well-being, Human Resource Management, Employee Engagement, Workplace Wellness, Mental Health, Work-Life Balance, Employee Satisfaction.

CIRCULAR BUSINESS MODEL: A SUSTAINABLE APPROACH TO MODERN BUSINESS MANAGEMENT

Mr. M. Sanjai

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: sanjaikavitha08@gmail.com

ABSTRACT

Circular Business Models (CBMs) are transforming modern businesses by replacing the traditional linear 'take-make-dispose' model with systems that emphasize resource efficiency, reuse, repair, remanufacturing, and recycling. This paper examines the concept, importance, applications, benefits, challenges, and future prospects of circular business models. It is based on secondary data from books, journal articles, and industry reports. The study concludes that CBMs enhance sustainability, improve competitiveness, reduce waste, and support long-term economic growth.

Keywords: Circular Business Model, Circular Economy, Sustainability, Resource Efficiency, Recycling, Business Innovation.

WASTE MANAGEMENT TO RESOURCE EFFICIENCY

Mr. M. Surya

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

ABSTRACT

Waste management has become a major global concern due to rapid urbanization, industrialization, and increasing population. Traditional methods of waste disposal, such as landfilling and open dumping, have created serious environmental, economic, and public health challenges. In recent years, the concept of resource efficiency has emerged as a sustainable approach that emphasizes reducing waste generation, reusing materials, recycling valuable resources, and recovering energy from waste. This transition supports the principles of the circular economy by ensuring that resources remain in productive use for as long as possible.

The purpose of this study is to examine how effective waste management practices contribute to resource efficiency and sustainable development. The paper reviews existing literature, government initiatives, industrial practices, and technological advancements related to waste segregation, recycling, composting, waste-to-energy systems, and circular economy strategies. A qualitative research approach based on secondary data from journals, conference proceedings, reports, and policy documents is adopted to understand current trends and best practices.

The findings indicate that efficient waste management not only reduces environmental pollution but also conserves natural resources, lowers greenhouse gas emissions, creates employment opportunities, and improves economic productivity. However, challenges such as inadequate infrastructure, low public awareness, limited investment, and policy implementation gaps continue to hinder progress in many developing countries.

Keywords: Waste Management, Resource Efficiency, Circular Economy, Recycling, Sustainability, Waste-to-Energy, Environmental Management.

AI-Enabled Green Human Resource Management for Environmental Sustainability: A Strategic Approach

Ms. Aaisha Nasreen M.

Department of Management Studies,
Christ Arts and Science College (Affiliated to Pondicherry University), Moolakulam,
Puducherry, India.

E-mail: nasreenaaisha12@gmail.com

ABSTRACT

Human resources management by firms changes via artificial intelligence, involving much more than that faster speeds or making jobs easier. More companies now use AI to move forward their HR methods in a greener manner, basically merging technology with green habits aiming at aiding ecological preservation. This research investigates real results when organizations apply AI within Green HRM, how truly it advances sustainability goals sustainability, and the reasons this is important. In the center of the problem lie the fresh chances AI offers to improve HR I sustainability, alongside the real problems firms encounter when trying to put it into action. This study further investigates why AI-driven Green HRM matters and is clear about it explains the advantages companies truly experience. To get these answers, I rely on qualitative research pulling data from books, academic articles, meeting summaries, plus various printed sources. Next I begin work and look around to identify main patterns and trends about how AI gets used in Green HRM. Some aspects become clear immediately. AI helps the environment now. Friendly HRM reduces excess waste, especially paper. It makes HR processes smarter. Also more efficient, saves power, and motivates workers to take green actions. But truthfully matters are rarely simple.

Keywords: Artificial Intelligence (AI), Green Human Resource Management (Green HRM), Environmental Sustainability, Sustainable Development, Green Workplace Practices, Human Resource Management (HRM).

The Impact of AI on Customer Satisfaction in Logistics

Mr. Lokesh M.

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: lokeshvaran131@gmail.com

ABSTRACT

Artificial Intelligence (AI) has revolutionized the logistics industry by helping it achieve operational excellence while at the same time shortening delivery periods. The effect of artificial intelligence is visible in the logistics industry through machine learning, analytics, route optimization, chatbots, and automatization, all of which allow the logistics industry to operate excellently while meeting customer expectations. As a result, this paper set out to establish the relationship between logistics and customer satisfaction while determining the effect of AI on the two aspects. This paper adopted a qualitative research design to evaluate the impact of artificial intelligence on logistics and customer satisfaction. Upon reviewing existing literature, the paper established that AI had a significant effect on logistics, including improving delivery functions, communication, inventory, and customer service. This paper recommends the adoption of artificial intelligence by logistics companies to remain competitive while meeting customer expectations.

KEYWORDS: Artificial Intelligence (AI), Customer Satisfaction, Logistics, Supply Chain Management, Machine Learning, Predictive Analytics, Route Optimization, Warehouse Automation.

Ai-powered learning and development in organizations

Mr. S. Bharatheswar

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

ABSTRACT

Artificial Intelligence (AI) is transforming the way organizations approach learning and development (L&D). Traditional training methods often follow a standard format that may not meet the diverse learning needs of employees. AI-powered learning systems address this challenge by offering personalized learning experiences, adaptive content, intelligent recommendations, and real-time performance tracking. These technologies enable employees to acquire relevant skills at their own pace while helping organizations build a more capable and future-ready workforce. This paper examines the role of AI in modern organizational learning and development, highlighting its impact on employee skill enhancement, engagement, productivity, and continuous learning. The study adopts a qualitative approach based on a review of recent national and international research articles, industry reports, and conference papers. The findings indicate that AI-supported learning platforms improve training effectiveness by identifying skill gaps, recommending customized learning paths, automating administrative tasks, and providing data-driven insights for decision-making. Despite these advantages, organizations face challenges such as data privacy concerns, implementation costs, algorithmic bias, and the need to balance technology with human interaction. Successful adoption of AI in learning and development therefore requires ethical AI practices, employee trust, and continuous support from management. The paper concludes that AI-powered learning and development is not a replacement for human trainers but a powerful tool that enhances learning outcomes and organizational performance. As digital transformation accelerates across industries, AI-enabled learning is expected to become a strategic component of talent development and organizational success.

Keywords: Artificial Intelligence, Learning and Development, Employee Training, Personalized Learning, Digital Learning, Skill Development, Organizational Performance.

THE IMPACT OF AI ON STARTUP SUCCESS

Mr. Fahad R.

Department of Business Administration,
Christ Arts and Science College, Puducherry, India.

E-mail: fahadrfaadr1@gmail.com

Abstract:

Artificial Intelligence (AI) has become one of the most influential technologies driving innovation and growth in the startup ecosystem. Startups operate in highly competitive environments where quick decision-making, efficient resource utilization, and customer satisfaction are essential for long-term success. AI enables startups to automate routine tasks, analyze large volumes of data, predict market trends, and personalize customer experiences, allowing them to compete effectively with larger organizations. AI-powered tools such as machine learning, natural language processing, predictive analytics, and intelligent automation help startups improve productivity, reduce operational costs, and make data-driven business decisions.

This paper examines the impact of AI on startup success by exploring its applications across various business functions, including marketing, finance, customer service, human resource management, and product development. The study also discusses the major benefits of AI, such as improved efficiency, innovation, scalability, enhanced customer engagement, and better decision-making. At the same time, it highlights the challenges faced by startups in adopting AI, including high implementation costs, lack of skilled professionals, data privacy concerns, ethical issues, and technological limitations.

The paper reviews real-world examples of AI-driven startups that have successfully leveraged artificial intelligence to gain a competitive advantage and accelerate business growth. It also emphasizes the future potential of AI in creating smarter, more sustainable, and globally competitive startups.

Keywords:

Artificial Intelligence (AI), Startups, Startup Success, Innovation, Machine Learning, Business Growth, Automation, Data Analytics, Decision-Making, Customer Experience.

Roll of AI transforming in Human Resource Management

Ms. M. Anusree

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.
E-mail: murugananusree19@gmail.com

ABSTRACT

Artificial Intelligence (AI) is transforming Human Resource Management (HRM) by improving the efficiency, accuracy, and quality of HR functions. AI-powered technologies are increasingly used in recruitment, employee onboarding, performance management, training and development, payroll processing, workforce planning, and employee engagement. By automating repetitive administrative tasks and analyzing large volumes of employee data, AI enables HR professionals to make faster, more informed, and data-driven decisions while enhancing organizational productivity and employee experience.

Despite its significant benefits, the adoption of AI in HRM also presents several challenges. Issues such as algorithmic bias, data privacy, ethical concerns, transparency, and accountability have raised important questions regarding the responsible use of AI in human resource practices. Organizations must ensure that AI systems comply with legal and ethical standards while protecting employee information and promoting fairness in recruitment, promotion, and performance evaluation. Human oversight remains essential to minimize risks and maintain employee trust.

This study examines the role of AI in transforming Human Resource Management through a qualitative research approach based on secondary data collected from books, scholarly journals, research articles, and industry reports. The findings indicate that AI enhances operational efficiency, supports strategic decision-making, and improves overall HR effectiveness. However, successful AI implementation requires a balanced approach that combines advanced technology with human judgment, ethical governance, and continuous monitoring. Responsible adoption of AI can help organizations achieve sustainable HR practices, improved employee satisfaction, and long-term organizational success.

Keywords: Artificial Intelligence (AI), Human Resource Management (HRM), Recruitment, Employee Onboarding, Performance Management, Training and Development, Employee Engagement, Payroll Automation, Data Analytics, Ethical AI.

AI IN DRIVEN DECISION MAKING IN LOGISTICS MANAGEMENT

Mr. M. Adhish

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: adhishpy2007@gmail.com

ABSTRACT

Artificial Intelligence (AI) has become a powerful tool in supply chain operations by enhancing the velocity, precision, and caliber of choices within supply chain activities. In current business settings, supply chain leaders encounter various hurdles including demand uncertainty, route planning, stock management, storage performance, and prompt shipment. Traditional decision-making methods frequently rely upon manual analysis and past judgment, which might not be enough within a very dynamic and competitive market. In this situation, AI- data driven decision making offers a smarter and more efficient approach to logistics management. This research centers upon how artificial intelligence aids choices at strategic, tactical, and operational levels of the supply chain. AI tools including machine learning, forecasting analysis, natural language processing handling, and smart automation assist groups manage huge amounts of information, find out models, predict needs, improve shipping paths, and lower business dangers. AI also enhances real-decision time making by allowing rapid answers to interruptions like delays, fuel price changes, traffic states, and supply line jams. This study shows that AI helps with improved stock scheduling, less transport costs expenses, better client support, and general work effectiveness. It also looks at the real world uses of AI in warehouse control, vehicle planning, package monitoring, and so on coordination with suppliers. Meanwhile, the research notes some hurdles regarding implementation. Artificial intelligence, encompassing significant financial outlays, problems regarding data integrity, intricate technical demands, and the necessity for skilled human resources. Overall, AI-data driven decision making is reshaping logistics management by making the system efficient, more intelligent, responsive, and data- directed. The research finds firms using AI in supply chains gain higher efficiency, precision, and lasting competitive edge. Thus, AI serves not merely as a technical instrument but also as a strategic choice aid mechanism for the future of logistics management.

Keywords: Artificial Intelligence (AI), Decision Making, Logistics Management, Supply Chain Management, Predictive Analytics, Machine Learning, Route Optimization, Warehouse Automation, Real-Time Data, Logistics Efficiency.

AI and Workplace Decision-Making

Mr. M. Marc Antony Valmy

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

ABSTRACT

Artificial Intelligence (AI) has become an important part of workplace decision-making across industries by helping organizations analyze large volumes of data, identify patterns, and support faster and more accurate decisions. Rather than replacing human judgment, AI acts as a decision-support tool that enables managers and employees to make informed choices in areas such as recruitment, performance management, customer service, supply chain operations, finance, and strategic planning. As organizations continue their digital transformation, understanding the role of AI in decision-making has become increasingly significant for both researchers and practitioners. This paper examines the impact of AI on workplace decision-making by reviewing existing literature, industry practices, and recent technological developments. The study adopts a qualitative research approach based on secondary data collected from scholarly journals, conference papers, books, and reputable organizational reports. It explores the benefits of AI, including improved efficiency, enhanced productivity, data-driven decision-making, reduced human error, and better resource allocation. At the same time, the paper discusses challenges such as algorithmic bias, ethical concerns, privacy issues, transparency, employee trust, and the continued need for human oversight. The findings indicate that organizations achieve the best outcomes when AI complements rather than replaces human expertise. Successful implementation depends not only on technological capability but also on responsible governance, employee training, and ethical decision-making frameworks. The study concludes that AI has the potential to transform workplace decision-making by creating more agile, efficient, and evidence-based organizations while emphasizing that human values, accountability, and critical thinking remain essential for sustainable organizational success.

Keywords: Artificial Intelligence, Workplace Decision-Making, Human Resource Management, Data-Driven Decisions, Organizational Performance, Digital Transformation, Ethics in AI.

**EXPLORING THE IMPACT OF ARTIFICIAL INTELLIGENCE ON WORK-LIFE
BALANCE: A PRIMARY DATA ANALYSIS**

Mr. M. Nishanth Sagar

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: nishanthsagar2007@gmail.com

ABSTRACT :

This research paper conducts a comprehensive primary data analysis to investigate the impact of artificial intelligence (AI) on work-life balance. Drawing from existing datasets, this study aims to provide insights into how the integration of AI technologies influences various aspects of work-life balance, including workload management, time utilization, and employee well-being. Through a systematic review and synthesis of available literature, surveys, and organizational reports, this paper seeks to identify trends, patterns, and challenges associated with AI adoption in the workplace. The findings contribute to a deeper understanding of the implications of AI for work-life balance and offer implications for practice and future research.

Keywords: Artificial Intelligence (AI), Work-Life Balance, Primary Data Analysis, Workplace Dynamics, Employee Well-being, Technology Integration

Ai-Artificial Intelligence in Employee Relations

Mr. B. Sham

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

ABSTRACT

Artificial Intelligence (AI) is transforming the way organizations manage employee relations by improving communication, strengthening employee engagement, and supporting fair and transparent human resource practices. Modern AI technologies such as chatbots, predictive analytics, sentiment analysis, and intelligent HR systems enable organizations to respond quickly to employee concerns, monitor workplace satisfaction, and make informed decisions based on real-time data. These technologies help HR professionals reduce administrative workload and focus more on building positive relationships with employees.

This paper explores the role of AI in enhancing employee relations and examines its influence on communication, conflict resolution, employee engagement, performance management, and workplace trust. The study is based on secondary data collected from research articles, books, industry reports, and credible online sources. The findings indicate that AI can improve employee experiences by providing timely support, personalized HR services, and data-driven decision-making. However, the study also highlights challenges such as privacy concerns, algorithmic bias, reduced human interaction, and ethical issues that organizations must address while implementing AI technologies.

Keywords: Artificial Intelligence, Employee Relations, Human Resource Management, Employee Engagement, Workplace Communication, AI in HR, Employee Experience. This study adopts a mixed-method approach, combining quantitative analysis (surveys and AI-driven HR data) with qualitative insights (interviews with HR professionals and employees) to explore the role, impact, and limitations of AI in ER functions. The findings suggest that while AI significantly enhances efficiency, transparency, and predictive capabilities in HRM, it cannot fully replace the human touch required for conflict resolution, ethical decision-making, and employee well-being.

THE IMPACT OF AI ON EMPLOYEE LEARNING AND DEVELOPMENT

Mr. B. Gowtham Ram

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: gowthamram271@gmail.com

ABSTRACT

Artificial Intelligence (AI) is revolutionizing the way organizations conduct training and development activities for their employees. In the conventional approach, the training programs offer training to all the employees without considering their learning preferences. AI solves this issue by personalizing the training, bridging the learning gap and giving instant feedback. With the help of AI-based learning tools, like chatbots, virtual assistants, and intelligent learning management systems, learning and training becomes more interactive and engaging. Organizations increasingly adopting digitalization have found AI as an essential component of their learning and development initiatives. There are also various challenges associated with AI-based learning and development, including issues of data privacy, high cost of implementation and the ability of employees to cope with advanced technologies. This paper will analyze the influence of AI on employee learning and development through its benefits, challenges and future opportunities. The study will be conducted through secondary data obtained from books, research papers, journals and other credible online resources. It was revealed that AI increases learning efficiency, improves employee performance, and helps them develop necessary skills, thus making it very useful in today's organizations.

Keywords: Artificial Intelligence, Employee Learning, Learning and Development, Human Resource Management, Employee Training.

Responsible AI in HRM, ethics, privacy and governance

Ms. S. Hinduja

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: hindujahinduja916@gmail.com

ABSTRACT

Human Resource Management (HRM) is being transformed by Artificial Intelligence (AI) by improving recruitment, employee performance management, workforce planning, and organizational decision-creating. While AI boosts efficiency and productivity, its growing application also brings up key worries about ethics, data governance, and privacy. This research investigates the notion of Responsible AI in HRM and looks at ways ethics, privacy rules, and control work together frameworks help ensure fair and accountable use of AI in human resources practices.

This study uses a qualitative method that relies on reviewing secondary data sources gathered from scholarly journals, monographs, market studies, and documents issued by global bodies. The gathered data were examined through thematic analysis methods analyzed to find main chances, hurdles, and top methods linked with Responsible AI in HRM. Results show AI greatly enhances HR duties via support data-driven decision-creating and lessening administrative duties. Yet, problems include algorithmic prejudice, absence of openness, danger to privacy, and poor control may hurt worker trust and firm results badly. The study underscores the necessity for human supervision, moral AI rules, and strong data safeguard actions, and functional control systems to guarantee the responsible adoption of AI.

This research finds that Responsible AI ought to supplement human judgment instead of replacing them. Firms which combine ethics, privacy, and governance into AI implementation are better placed to reach fair, open, and clear outcomes sustainable HRM practices while fostering employee trust and long-term organizational success.

Keywords: Human Resource Management, Responsible Artificial Intelligence, AI Ethics, Data Privacy, AI Governance, Employee Trust.

**“Ethical Challenges of artificial intelligence in human resource management balancing
innovation fairness and employee trust “**

Ms. Asmath Farhana A.

Bachelor of Business Administration,
Christ Arts and Science College, Puducherry, India.

E-mail: asmaahadh325@gmail.com

ABSTRACT

Artificial Intelligence (AI) has become one of the most influential technologies in today’s business environment. Organizations across different industries are increasingly adopting AI to improve efficiency, reduce operational costs, and support better decision-making. In Human Resource Management (HRM), AI has transformed traditional HR practices by automating recruitment, employee performance evaluation, workforce planning, learning and development, and talent management. AI-powered systems can process large amounts of employee data quickly, helping HR professionals make faster and more informed decisions. As a result, organizations are able to improve productivity, enhance employee experience, and gain a competitive advantage . Despite these benefits, the growing use of AI in HRM has also raised several ethical concerns. AI systems depend on data and algorithms, and if these systems are trained using biased or incomplete information, they may produce unfair or discriminatory outcomes. Ethical issues such as algorithmic bias, employee privacy, lack of transparency, accountability, and reduced employee trust have become major challenges for organizations implementing AI in HR practices.

KEYWORDS: Artificial Intelligence (AI), Human Resource Management (HRM), Ethical AI, Algorithmic Bias, Fairness, Employee Trust, Data Privacy, Responsible AI.

**"EXPLORING THE IMPACT OF ARTIFICIAL INTELLIGENCE ON WORK-LIFE
BALANCE:A PRIMARY DATA ANALYSIS"**

Mr. M. Nishanth Sagar

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: nishanthsgar2007@gmail.com

ABSTRACT

This research paper conducts a comprehensive Primary data analysis to investigate the impact of artificial intelligence (AI) on work-life balance. Drawing from existing datasets, this study aims to provide insights into how the integration of AI technologies influences various aspects of work-life balance, including workload management, time utilization, and employee well-being. Through a systematic review and synthesis of available literature, surveys, and organizational reports, this paper seeks to identify trends, patterns, and challenges associated with AI adoption in the workplace. The findings contribute to a deeper understanding of the implications of AI for work-life balance and offer implications for practice and future research.

Keywords: Artificial Intelligence (AI), Work-Life Balance, Primary Data Analysis, Workplace Dynamics, Employee Well-being, Technology Integration

AI-Based Workforce Planning and Future Talent Management

Mr. Logeshvar

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: logeshvar1329@gmail.com

Abstract

Artificial Intelligence (AI) is transforming human resource management by enabling organizations to plan their workforce more effectively and manage future talent strategically. AI-based workforce planning uses technologies such as machine learning, predictive analytics, and data-driven decision-making to forecast workforce requirements, identify skill gaps, and optimize recruitment processes. It helps organizations attract, develop, and retain talented employees while improving operational efficiency and reducing hiring costs. AI also supports personalized learning, employee performance evaluation, succession planning, and workforce forecasting, allowing businesses to adapt to changing market demands. As industries continue to embrace digital transformation, AI plays a vital role in creating a future-ready workforce that aligns with organizational goals and long-term business development. Despite its numerous benefits, the implementation of AI in workforce planning presents challenges such as data privacy concerns, algorithmic bias, ethical issues, and the need for employee reskilling. Organizations must therefore adopt responsible AI practices by ensuring transparency, fairness, and human oversight in HR decisions. This study explores the role of AI in workforce planning and future talent management, highlighting its impact on business growth, employee engagement, and organizational competitiveness. It concludes that the effective integration of AI with human expertise can enhance strategic workforce planning, improve talent management practices, and contribute significantly to sustainable business success in the evolving digital economy.

Keywords:

Artificial Intelligence (AI), Workforce Planning, Future Talent Management, Human Resource Management (HRM), Predictive Analytics, Machine Learning, HR Analytics, Talent Acquisition, Employee Development, Workforce Forecasting, Business Development.

TALENT MANAGEMENT THROUGH DATA ANALYSIS WITH HR ANALYTICS: A WAY TO KEEP AND OPTIMIZE HUMAN ASSET RESOURCES

Mr. R. Sivanathan

Department of Bachelor of Business Administration,
Christ Arts and Science College, Puducherry, India.

E-mail: sivanathan478@gmail.com

ABSTRACT

In the business world we live in today it is really important that the people in charge of hiring and managing employees make sure their plans match the goals of the company. The old way of doing things, where people just make decisions based on what they think does not work well when there are big changes in the workforce people are lacking the skills they need and employees are leaving their jobs and it is costing the company a lot of money. This paper is about how using data and analytics in resources is changing the way companies find, manage and keep the best employees. We looked at numbers from the time an employee is with a company across many different industries and we also talked to people who work in human resources to get their thoughts and ideas. What we found out is that companies that use data to predict what will happen in the future saw a decrease in the number of employees who leave their jobs on their own and they were also better at keeping the employees who are really good at what they do. We also found out that when companies use data about the skills their employees have to fill job openings from within the company it really helps to keep employees engaged and interested in their work. However we also saw that there are some problems, like when different computer systems do not work well together and employees getting stressed out because they feel like they are being watched all the time at work. This paper gives companies a plan to follow so they can start using data to predict what will happen in the future instead of just looking at what happened in the past and they can do it in a way that is fair and respectful to their employees. Really using data and analytics, in resources helps companies turn numbers into real actions and it shows that investing in people is what really drives success in business.

Keywords:

Human Resource Analytics, Talent Management, Predictive Analytics, Workforce Retention, Internal Mobility, Data Governance

HIGHER EDUCATION AND GRADUATE EMPLOYABILITY

Ms. S. Sangeetha

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: subrayansangeetha630@gmail.com

Abstract

Higher education systems worldwide are under increasing pressure to demonstrate both academic excellence and labor-market relevance. Graduate workers are increasingly viewed as well-prepared in theoretical matters while remaining deficient in modern professional competencies demanded by employers [1], [3]. This paper provides an initial analysis of the relationship between higher education and graduate employability. By comparing the current curricula with the required skills profile of employers, this study elucidates the magnitude and nature of the gap and its evolution over time. The paper discusses the disparity in employability trends between disciplines identified by the study. The paper compares the traditional teacher-centric instructional model and the outcome-based modern pedagogical model [7], [8] that emphasizes producing work-ready graduates. The research makes extensive use of secondary sources of information, including comparative analyses, review studies, and employability frameworks [14], [17]. The study identifies inadequate work-integrated learning and poor career guidance in higher education as the main contributors to the graduate employability gap [14], [17]. The paper recommends that policymakers, academia, and employers should consider several interventions in addressing the emerging challenges and offers some suggestions for future research. It provides a brief synopsis of the issues affecting graduate employability and the need for stakeholders in higher education to take action. Nonetheless, the study is only a starting point in empirical studies on employability and graduate analysis of the issues.

Keywords:

Higher Education; Graduate Employability; Skills Gap; Curriculum Reform; Industry-Academia Linkage; Work-Integrated Learning; Employability Skills; Labour Market

AI-Powered. Their Impact on Human Communication

Research Paper

Mr. C. Kowshik

Department of Bachelor of Business Administration,
Christ Arts and Science College, Puducherry, India.

E-mail: kowshik092006@gmail.com

ABSTRACT

We live in a world that is really computerized. This has changed the way we talk to each other a lot.. Artificial Intelligence is really changing things. One of the tools that Artificial Intelligence uses is the Chatbot. People are using Chatbots in lots of areas, like customer service, education, healthcare, banks, online shopping and social media. The Chatbot is a part of Artificial Intelligence and people are finding new ways to use Artificial Intelligence and Chatbots every day. Artificial Intelligence and Chatbots are helping people in ways. These Chatbot tools use ways to understand what people are asking and give an answer. They do this with the help of Natural Language Processing, machine learning and large language models. Chatbots help people get information faster fix problems and talk to companies easily. They are indeed very useful since they help simplify the process by which individuals can access services from firms. Artificial Intelligence and Chatbots are revolutionizing communication. This research is based on the impact of Chatbots on communication. It checks the sides of using Chatbots to talk to people. Indeed, Chatbots have played an instrumental role in making the communication process fast and efficient in the Internet space. However, Chatbots cannot substitute human interaction since they lack emotional intelligence and judgment. According to the results of this study, Chatbots have been created to facilitate human interaction and not to hinder it. Chatbots give speed, convenience, accessibility and personal service. There are several downsides of using chatbots including the lack of emotional intelligence, issues related to privacy, and spreading of fake information. This research uses data from studies, books, reports and real-life examples. Chatbots are good for support. Human interaction is still important. The cooperation between Chatbots and humans is possible. Chatbots should never become a medium of people's conversations. The aim is that of making use of Chatbots for communication purposes, but not to substitute it.

Keywords:

Artificial Intelligence, Chatbots, Human Communication, Natural Language Processing, Digital Communication.

Artificial Intelligence for Risk Management and Fraud Detection in Business

Ms. A. Vaithisvary

Department of Business Administration,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: vaithisvary26@gmail.com

ABSTRACT

Artificial Intelligence (AI) may be utilized in diverse ways to detect threats and guarantee that fraud is minimized. The technology enables firms to analyze, process, and interpret information at an increased rate, which aids in enhancing decisions made. This is precisely why AI is considered essential for the contemporary digital economy because it can handle massive amounts of data that must be assessed to guarantee that no fraudulent activities are carried out.

This paper discusses the main aspects of using Artificial Intelligence for risk management and fraud detection in the banking sector, insurance companies, e-commerce, and other business sectors. The research will also highlight how AI applications support businesses with the ability to make appropriate, data-driven decisions. The study will demonstrate that, despite numerous challenges associated with the application of AI technologies, they are beneficial for analyzing and predicting emerging issues in different areas of business.

Modern businesses operate in a highly competitive environment where they are forced to use all available tools to gain an advantage over their rivals. One of such advantages is represented by the ability to make timely and accurate forecasts of possible risks and detect fraudulent activities.

This paper concludes that the concept of artificial intelligence (AI) is changing corporate risk management and fraud detection. The research showed that with the right combination of modern technologies and human intellect, businesses can protect themselves from fraud and ensure long-term profitable growth. It is critical for companies to invest in the development of artificial intelligence in the context of future cybersecurity and profit in a competitive business world.

KEYWORDS:

Artificial Intelligence (AI), Risk Management, Fraud Detection, Machine Learning, Predictive Analytics, Business Intelligence, Cybersecurity, Financial Fraud, Ethical AI, Sustainable Business.

How AI is Reshaping Consumer Behavior and Marketing

Ms. M. Rakini

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: rakinimuthukumaran08@gmail.com

ABSTRACT

Artificial Intelligence (AI) is a concept that has fundamentally transformed how organizations can perform research, identify, and target their consumers. In today's competitive economy, where companies are highly involved in satisfying heterogeneous and specific wants and needs of consumers, artificial intelligence has enabled them to research extensively and gather significant information about their potential audience. The technology has fundamentally changed the game for many firms by allowing them to be more efficient and effective with their marketing strategies to satisfy their consumers' expectations. Given the increased competitiveness of the modern economy and the rising demand for products and services to meet the diverse and unique needs of consumers, companies have adopted new emerging technologies such as chatbots, recommendation systems, virtual assistants, and predictive analytics.

When it comes to marketing, artificial intelligence has allowed organizations to make more informed business decisions, strengthen long-standing relationships with their consumers, and re-engineer their strategies to be more efficient and effective in satisfying their customers' wants and needs. Generally, the role of artificial intelligence in marketing has enabled firms to be good at predicting future market trends, thus, increasing their chances of being more profitable. However, the application of artificial intelligence in marketing has created numerous challenges as organizations struggle to maximize their profits while minimizing the risks involved in the adoption of the technology. In summary, artificial intelligence is a disruptive innovation that has improved the performance of many organizations as they utilize the technology to meet the rising demand for differentiated products and services. Thus, companies that adopt artificial intelligence to transform their marketing strategies while at the same time being mindful of the legal implications of using the technology to protect and secure their consumers' data will be more successful than those that do not embrace the innovation.

KEYWORDS:

Artificial Intelligence (AI), Consumer Behavior, Digital Marketing, Personalization, Customer Experience, Predictive, Analytics Chatbots, Recommendation, Systems, and Data Analytics Customer Engagement.

ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE BUSINESS INNOVATION

Ms. A. Arya

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: aryaaaru25102007@gmail.com

ABSTRACT

Artificial Intelligence (AI) is a disruptive force that is set to revolutionize business innovation, competition, and sustainability in the modern economy. Sustainable business innovation is a concept that entails the economic value derived from conserving the environment while at the same time promoting social values. Write a paper on the role of artificial intelligence in driving sustainable business innovation while enabling smart decision-making, automation, predictive analytics, and management of resources. Discuss whether artificial intelligence can enable sustainable business innovation through smart decision-making, automation, predictive analytics, and management of resources. Furthermore, discuss whether artificial intelligence can contribute to meeting the UN's Sustainable Development Goals by promoting sustainable production and consumption methods. The paper will include a review of existing literature on the possibilities of artificial intelligence in promoting sustainable business innovation. A qualitative study of the selected articles and cases will be performed to reveal the opportunities and threats of using artificial intelligence to promote sustainable business innovation. The paper will highlight the key areas of opportunity in various industries as well as the key success factors of using artificial intelligence to achieve sustainable business innovation. The paper will conclude that artificial intelligence plays a pivotal role in promoting sustainable business in the modern economy. It will also argue that companies that are willing to invest in this technology while at the same time considering the economic, ethical, and technical constraints stand to benefit from a competitive advantage, brand image, sustainability, and profitability.

KEY WORDS: Artificial Intelligence (AI), Sustainable Business Innovation, Automation, Predictive Analytics, Smart Decision-Making, Resource Optimization, Environmental Sustainability, Sustainable Development Goals (SDGs).

THE FUTURE OF TALENT MANAGEMENT THROUGH ARTIFICIAL INTELLIGENCE

Ms. A. Arya

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: aryaaaru25102007@gmail.com

Abstract

Artificial Intelligence (AI) is transforming talent management by helping organizations attract, develop, and retain skilled employees more effectively. Traditional talent management methods often require significant time and human effort, whereas AI-powered technologies improve efficiency through automation, data analysis, and predictive decision-making. AI can support recruitment by screening resumes, matching candidates to job requirements, and reducing the time required for hiring. It also enhances employee development by identifying skill gaps, recommending personalized learning programs, and supporting career planning. Furthermore, AI enables organizations to predict employee performance, identify future leaders, and improve employee retention through data-driven insights. However, the adoption of AI also presents challenges such as data privacy, algorithmic bias, ethical concerns, and the need for transparency in decision-making. Organizations must combine AI capabilities with human judgment to ensure fairness and employee trust. The future of talent management lies in the effective integration of AI and human expertise, creating a more agile, productive, and inclusive workforce. As AI continues to evolve, it will play a vital role in shaping modern human resource practices and enhancing organizational success in the digital era.

Keywords: Artificial Intelligence (AI), Talent Management, Human Resource Management (HRM), Recruitment, Employee Development, Predictive Analytics, Employee Retention, Automation, Digital Transformation, Workforce Planning.

AI- DRIVEN PREDICTIVE ANALYTICS FOR SUSTAINABLE GROWTH

Mr. S. Thamizhselvan

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: thamizhselvan937@gamil.com

ABSTRACT

AI has changed industries, put momentum behind business growth, and brought about significant changes at the societal level. The AI agenda empowers businesses to improve workflow, decision-making, product development, and service delivery. Automation driven by AI makes workflows smooth and cost-efficient, besides allowing for predictive analytics in strategic planning. Also, AI has become an asset for social issues ranging from healthcare diagnostics to education, climate change, and smart cities. This optimization is at the expense of devouring the other troublesome aspects, including ethical considerations, data privacy risks, and several challenges in the workplace due to workforce displacements. Inclusive growth, these forces therefore should cohere to create AI governance frameworks, reskill the workforce, and regulate the ethical use of AI. This paper will set forth a chance to take on the implications that AI will be having on business development and moving society towards addressing positive scouring development mechanisms, pointing this out through opportunities, challenges, and the need for responsible evolution of AI toward workable, sustainable, and equitable growth.

Keywords: Artificial Intelligence, Business Growth, Societal Transformation, Automation, Predictive Analytics, Ethical AI, Workforce Reskilling, Smart Cities, Healthcare Innovation, Sustainable Development.

CYBER SECURITY, PRIVACY, AND DIGITAL RIGHTS

Mr. K. Yogesh Choudhary

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: choudharyyogesh2007@gmail.com

ABSTRACT

Social media has become a necessity in people's everyday life due to its ability to enable communication between people and provide an opportunity to share information and establish virtual social communities. Still, the current level of informativeness and popularity of social networks raises serious concerns about the privacy and security of personal information. In this way, the problem of social media users is the issue of ensuring that their personal information is safe from being misused by others. One should be aware of the potential cyber threats like phishing, cyberstalking, money theft, and robbery of personal information on the web. Moreover, social media companies should be held accountable for storing users' data according to cybersecurity standards and not violating the privacy of personal information.

Social media platforms continue to be the source of serious threats to users' personal data. In particular, individuals who use social media on a regular basis are highly vulnerable to cyber threats since they tend to provide various personal data on the websites and applications. However, the information is often misused by malicious actors, which has prompted many users to question the security of using the platforms in terms of safeguarding their data. Therefore, social media users must ensure that their personal data is protected by exercising caution and being aware of the potential cyber threats. Moreover, social media firms and lawmakers should collaborate in order to ensure that users' data privacy rights are protected and that the companies follow cybersecurity safety standards to minimize the risks of data breaches. This research paper will investigate the main threats to personal data in social media contexts, as well as address privacy and cybersecurity issues in order to identify measures that can be taken to ensure that data is safeguarded. In addition, the paper will discuss the interplay between users, social media firms, and lawmakers in terms of protecting individuals' personal information and analyze how personal data can be secured in terms of cybersecurity awareness and privacy rights.

Keywords: social media, personal data, data privacy, cybersecurity, digital rights, data protection

The Entrepreneurship–Innovation Nexus: Strategic Management Perspectives on Startup Development

Ms. S. Thamaraiselvi

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: thamaraiselvi0615@gmail.com

Abstract

Abstract Entrepreneurship and innovation are widely regarded as twin pillars of economic renewal, yet strategic management research has, until recently, been marked by an analytical dichotomy that studies these two domains in isolation. This paper examines the entrepreneurship–innovation nexus through a strategic management lens, asking how startups convert innovative capability into durable competitive advantage across the early and growth stages of venture development. Drawing on a mixed-methods design combining a structured survey of 214 startup founders with in-depth interviews of 24 venture leaders, the study establishes how new ventures exploit innovative capability to generate competitive advantage over time. Quantitative results show that strategic agility, resource mobilization, and business model innovation are the strongest predictors of the innovation-to-performance conversion, while organizational innovation exhibits a comparatively modest but still significant effect. Qualitative findings further reveal that founders' strategic agility and their capacity to leverage limited resources smooth the transformation process from innovation to performance. This research paper has made significant contributions to the field of entrepreneurship in terms of the development of an integrated theoretical framework that covers opportunity identification, innovation strategies, resource mobilization, and performance.

Keywords: Entrepreneurship, Innovation Strategy, Startup Development, Dynamic Capabilities, Strategic Management, Resource-Based View, Venture Growth, Business Model Innovation

ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE FOR ENTREPRENEURSHIP AND BUSINESS TRANSFORMATION

Mr. A. Naresh

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: nareshcrace06@gmail.com

Abstract

Artificial Intelligence (AI) is a new technological development that is currently being integrated into various aspects of entrepreneurial activity and business processes. This paper discusses the role of AI in promoting sustainable entrepreneurship and business transformation through the application of AI-driven decision-making systems, automatization of diverse organizational processes, predictive analytics, and enhanced resource optimization to ensure economic sustainability. This study undertakes a qualitative evaluation of the research articles, industrial reports, and case studies on the role of AI in sustainable business development published in the past five years. It was found that AI-enabled computer software and robotics play a critical role in supporting businesses to identify emerging opportunities enhance their capabilities to meet customer demand while minimizing environmental impact and promoting innovative approaches to achieving sustainable development objectives. AI is also a key driver of business model innovation that supports firms in sustaining competitive advantage in the face of increased market competition. Besides, the paper unveiled some of the challenges that hinder commercialization and utilization of artificial intelligence by different organizations and entrepreneurs across the globe, for example, the high capital investment requirement, data security risks, and ethical implications brought about by adopting the technology. At the same time, the article suggests that artificial intelligence promotes sustainable entrepreneurial initiatives and transformation through the development of innovative business models for sustaining competitive advantages. Therefore, the authors advocate that firms, policymakers, and academics invest more effort in promoting adoption of the artificial intelligence technology to ensure that they have sustainable economic growth after the COVID-19 pandemic.

Keywords: artificial intelligence, sustainable entrepreneurship, business transformation, sustainable business innovation, smart decision making, automation.

HR ANALYSIS AS A STRATEGIC DRIVER OF TALENT MANAGEMENT.

Ms. V. Dhivya

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: dhivyavinayagamoorthy1813@gmail.com

Abstract

Human resource (HR) analytics has transformed from a reporting function that supported line managers in understanding business processes to a strategic level that influences people decisions. This paper will discuss how firms have leveraged human resource analytics to make people decisions, attract talent, and disrupt the status quo. The article will review trends in the application of the techniques and approaches learned in the class in people decisions, including recruitment, performance, and retention. The paper will also discuss the application of descriptive, predictive, and prescriptive analysis in people management decisions, including recruitment, performance, and retention [1]. The article will also review the challenges that people analysts face when applying predictive models in people management decisions. Therefore, this study will demonstrate how far organizations are in using the new discipline to manage their human capital by reviewing statistics on recruitment, performance management, and retention [4]. The study will fill the research gap by providing a gap analysis on the state of knowledge and practice of human resource analytics. The paper will reveal the variance in the level of knowledge and practice of human resource analytics in different organizational settings, including the heavy investment in predictive analytics [9]. This article will address the research problem by providing recommendations on leveraging data insights to effect corporate cultural change while developing an analytical framework for use in people analytics for decision-making purposes. The study will use secondary data to develop an analytical framework applicable in people analytics in an organizational setup.

Keywords: HR Analytics, Talent Management, Predictive Analytics, People Analytics, Workforce Planning, Data-Driven HR, Gap Analysis

AI- ENABLED CIRCULAR BUSINESS MODEL DRIVING SUSTAINABLE BUSINESS TRANSFORMATIONS

Ms. D. Divyasri

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: divyasridhinakaran@gmail.com

ABSTRACT

Artificial Intelligence (AI) is set to revolutionize conventional business models by introducing circular business capabilities to companies and fostering sustainable operations. AI-enabled circular business models promote the notion of circular business, which encourages companies to create more value while generating less waste and utilizing fewer resources. Additionally, by harnessing the power of AI, including machine learning, predictive analytics, Internet of Things, and big data, circular business will become productive, regenerative, and self-sustaining. Such a business model would also ensure that products are designed for a longer lifespan and facilitate their subsequent reuse, recycling, and repair. AI would also make the business process more transparent, promote data analytics, and drive the decision-making process while enhancing supply chains. This paper discusses the role of AI in promoting sustainable business, notably through the introduction of circular business practices. The paper will highlight the benefits and challenges of implementing AI-enabled circular business models and conclude by asserting that such a venture would result in sustainable business success while contributing to meeting sustainability goals and promoting sustainable development

KEYWORDS : Artificial Intelligence ,Circular Business Model ,Sustainable Business Sustainability, Resource efficiency , Internet of Things, Machine Learning, Big Data Analytics, Supply Chain Optimization, Recycling, Reuse product Life cycle, Data-Driven Decision Making, sustainable Development.

**ARTIFICIAL INTELLIGENCE IN STRATEGIC DECISION MAKING:
TRANSFORMING MODERN BUSINESS ORGANIZATION**

Ms. N. Rajsri

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: rajsrinagaraj1711@gmail.com

ABSTRACT

Artificial Intelligence has greatly influenced strategic decision-making in business organizations. Therefore, companies are now relying on artificial intelligence in order to make effective and efficient decisions. Through the implementation of artificial intelligence technologies such as; machine learning, predictive analytics, natural language processing and big data, firms make decisions, which in turn, lead to increased profits, reduced risks and improved relationships with consumers. This conceptual research paper aims to evaluate the role of artificial intelligence in strategic decision-making, as well as, how the same can be used to improve decision-making process in different industries. The paper will also address the potential opportunities and threats of implementing artificial intelligence technology in the decision-making process of different organizations. The current research paper is based on conceptual articles, journals, books and reports on artificial intelligence in business decision-making. The study concludes that artificial intelligence is essential in strategic decision-making process of business organizations due to its ability to help them stay ahead of the business competition curve. Moreover, the paper will demonstrate that the role played by artificial intelligence in strategic decision making process should not be used to override human decisions but rather to maximize human efforts in decision-making process.

KEYWORDS : Artificial Intelligence (AI), Strategic Decision Making, Business Strategy, Data-Driven ,Decision Making, Machine Learning, Predictive Analytics, Business Intelligence, Digital Transformation, Organizational Performance, Decision Support Systems, Big Data Analytics, AI-Driven Innovation, Competitive Advantage, Automation, Business Sustainability, Strategic Planning, Intelligent Decision Systems, Corporate Governance, Operational Efficiency, Modern Business Organizations

AI, in Business Decision Making and Strategy

Mr. S. Monish

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: monishsn39@gmail.com

Abstract

Artificial Intelligence is changing how companies work. Many businesses use it to make decisions and plan strategies. It helps them look at lots of data find patterns and predict what might happen. It also helps with tasks. As companies compete more AI gives managers ideas based on data. This helps them plan and run things smoothly. This paper looks at how AI's used in business decision making and strategy. We will explore what AI can do its benefits and challenges and what the future might hold for AI in business.

Keywords: AI, Business Decision Making, Business Strategy, Machine Learning, Data Analytics, Predictive Analytics, Strategic Management, Digital Transformation

**AI- DRIVRN PERSONALIZATION: TRANSFORMING CONSUMER
BEHAVIOUR THROUGH MARKETING ANALYTICS PROVIDE**

Ms. Pratibha Yadav

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: pratibha77553@gmail.com

ABSTRACT

Artificial Intelligence (AI) personalization is one of the latest trends that have the potential to revolutionize the way a business delivers its products and services to consumers on a large scale. The way companies use artificial intelligence to process customers' data and analyze their demands determines a possibility to offer individualized buying experiences, which, in turn, can increase customer satisfaction, ensuring brand loyalty and sales growth. However, as personalization is implemented through AI-powered marketing analytics, it poses some serious threats to consumer privacy and security of personal data. This paper will discuss the role of artificial intelligence in contemporary marketing analytics, focusing on its opportunities and challenges in modern businesses.

KEYWORDS

Artificial Intelligence (AI) AI-Driven Personalization Marketing Analytics Consumer Behaviour Customer Experience Personalized Marketing Data Analytics Customer Satisfaction Brand Loyalty Purchase Decisions Predictive Analytics Consumer Privacy Data Security Digital Marketing business innovation

**THE ROLE OF ARTIFICIAL INTELLIGENCE HIGH-PRESSURES
CRISIS DECISION-MAKING AND STRATEGY**

Ms. M. Sivamugeshni

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

ABSTRACT

This paper explores the trade-offs between faster responses and improved decision-making quality enabled by artificial intelligence (AI) use. With many organizations relying on AI analytic, predictive models, and recommendations to address financial, supply chain, cyber, or reputation crises faster, it is essential to understand this trade-off and its potential benefits and drawbacks. This study aims to achieve this goal by combining a large-scale qualitative study (based on a survey of 142 executives) with a multiple-case analysis to identify effective response approaches that would enable organizations to balance the benefits and drawbacks of using AI analytic. The results of this study demonstrated that, while significantly reducing decision-making time and enabling situational awareness, such technology creates blind spots and causes decisions based on false correlations. In addition, the results indicated that the most effective ways to reduce risks are the combination of human power and AI and post material and policy-making literature by providing additional insights into the nature of trade-offs involved in faster responses enabled by technology. In addition, demonstrating how these trade-offs manifest themselves in practice, it offers several recommendations for executives, risk managers, and policymakers.

Keyword: Artificial Intelligence, Crisis Decision-Making, High-Pressure Environments, Real-Time Analytics, Predictive Modeling, Machine Learning

Sustainable Development Goals (SDGs): A Global Framework for Sustainable Development

Mr. A. Ranjith

Department of Bachelor of Business Administration,
Christ Arts and Science College, Puducherry, India.

E-mail: ranjithdubey1@gmail.com

Abstract

The Sustainable Development Goals (SDGs) are a set of 17 interconnected global goals adopted by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development. These goals aim to eradicate poverty, protect the environment, promote peace, and ensure prosperity for all. The SDGs address major global challenges such as climate change, inequality, quality education, clean energy, sustainable cities, and responsible consumption. This research paper examines the importance of the SDGs, their objectives, implementation strategies, challenges, and future prospects. The study highlights that achieving the SDGs requires strong cooperation among governments, businesses, civil society organizations, and individuals. Although significant progress has been made in several areas, continued investment, policy support, innovation, and public participation are essential to achieve sustainable development by 2030.

Keywords: Sustainable Development Goals (SDGs), Sustainable Development, United Nations, Climate Change, Poverty Reduction, Environmental Protection, Global Development.

AI DRIVRN HR ANALYTICS FOR STRATEGIC TALENT MANAGEMENT

Ms. G. Oviya

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: goviya2810@gmail.com

ABSTRACT

The role of Artificial Intelligence (AI) in Human Resource Management is growing, as well as the ability of organizations to make smart and fast decisions. In particular, people use artificial intelligence for human resource analytics to make decisions that allow them to get the most out of their staff. This paper aims to demonstrate how AI-driven human resource analytics can be applied in talent management, as well as what benefits and threats they bring. The study will focus on such aspects of human resource management as recruitment, employee performance, workforce planning, learning and development, retention, and succession planning. It was found that AI-driven human resource analytics helps to find the most suitable employees for vacant positions, increases the efficiency and productivity of workers, and helps analyze and predict future staffing needs. Moreover, the study shows that the use of artificial intelligence in human resource management opens up many opportunities and advantages for companies, such as optimizing and automating human resource management, eliminating discrimination in the workplace, and improving the quality of decisions made. However, there are also challenges and threats that require immediate action, such as protecting personal data, ensuring ethical and responsible use of technologies, and taking into account the qualifications and capabilities of workers. Thus, it was found that artificial intelligence is a technology that allows companies to make strategic decisions to get the most qualified and skilled workers and maintain a high level of performance, productivity, and employee satisfaction.

KEYWORDS

Artificial Intelligence (AI) HR Analytics Strategic Management Predictive Analysis Machine Learning Evidence-Based HR Decisions Talent Acquisition Recruitment Employee Performance Employee Engagement Planning Retention People Analytics Skills Inventory Learning and Development Employee Experience Succession Planning HR Automation Performance Management of Human Resources (HRM)

**COMPREHENSIVE MULTI OMIC HETEROGENEOUS GRAPH DEEP LEARNING
FRAMEWORK FOR REAL TIME PRECISION ONCOLOGY DE NOVO TARGET
DISCOVERY AND EXASCALE DIGITAL TWIN DRUG RE- PURPOSING**

Mr. M. Kuganesan

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.

E-mail: kuganesan2007@gmail.com

Abstract

Precision oncology is changing healthcare. It helps doctors choose treatments based on tumor characteristics. Using all the information from multi-omic analyses is tough. This study aims to create a framework for real-time precision oncology. We focus on two things: finding targets and repurposing drugs using digital twins. We suggest a way to mine heterogeneous graphs. This method uses connections in a relational graph to find links between diseases and treatments. Using graph deep learning algorithms we find relationships among genes, proteins, pathways and treatments. Our framework can help clinicians and researchers. It can speed up the costly drug discovery process. Precision oncology can benefit from our framework. It uses multi-omic heterogeneous graphs, deep learning and exascale digital twins to update treatment plans in real-time. Our framework uses intelligence and digital twins to enable precision medicine and personalized healthcare. It suggests treatments. It can also be used to find relevant treatments, for a specific disease by repurposing drugs.

Keywords: Precision Oncology; Multi-Omics; Heterogeneous Graph Learning; Deep Learning; Digital Twin; De Novo Target Discovery; Drug Repurposing; Artificial Intelligence; Personalized Medicine; Exascale.

RESPONSIBLE AI IN CORPORATE DECISION MAKING

Mr. M. Kuganesan

Department of Management Studies,
Christ Arts and Science College, Puducherry, India.
E-mail: kuganesan2007@gmail.com

ABSTRACT

Artificial intelligence (AI) is no longer a novelty; it has become deeply involved in all aspects of human life, from personnel management, finances, and sales to logistics, production, and planning. [1] There is a growing body of ethical principles that ensure responsible AI, but practices that incorporate and verify responsible AI are limited. [2,3] The paper will discuss the concept of Responsible AI in a corporate setting. The authors have performed a literary and regulatory scan to identify objective and subjective factors that affect them in this area. The authors explore the theory/practice divide of Responsible AI and identify areas for further development based on their scan. The authors' scan of the reports from secondary sources revealed six problem areas of Responsible AI, including governance, transparency, accountability, auditing fairness, human oversight, and regulatory compliance. [4,5] Even though large multinational corporations are investing significantly in responsible AI, their attitude to this concept is ambiguous; while more than half of the total amount of resources (+60%) are projected to be allocated to auditing, fairness, and human oversight, the remaining five areas will receive the other half of resources. [6] The authors have suggested implementing the Responsible AI Decision Loop in corporate governance to evaluate auditing and ethical principles when making decisions.

THE ROLE OF ARTIFICIAL INTELLIGENCE IN STRATEGIC BUSINESS PLANNING

Mr. S. Thanighai Arasu

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: tt8256684@gamil.com

ABSTRACT

The role of artificial intelligence (AI) in strategic business planning has been increasingly growing in the dynamic economic environment of today's business world. The use of AI-enabled technologies, including machine learning, predictive analytics, natural language processing, and big data analytics, helps companies make effective decisions in the face of changing market conditions and diverse business needs. This paper aims to demonstrate how AI can support businesses in making the best choices to maximize performance and profitability while remaining agile and adaptable to the modern demands of the marketplace. The paper will also focus on the ways artificial intelligence can promote innovation, competitiveness, and customer-centric approaches, as well as sustainability and long-term viability in business planning. The study will be based on conceptual background and a comprehensive literature search. The paper will review scholarly articles, reports, and other sources published within the past five years to reveal the most important aspects of using AI in strategic planning, understand its potential advantages and disadvantages, and critically assess how companies can leverage this technology to maximize strategic benefits. The study expects to find that AI can enable firms to remain competitive and profitable by making it possible to adapt to the constant changes in the marketplace while also making the best strategic choices based on data insights. However, AI implementation in business planning is not without challenges, which means that organizations should be aware of different complexities and nuances of this approach.

KEYWORDS

Artificial intelligence (AI) Strategic business planning Business strategy Decision-making Predictive analytics Machine learning Data analytics Business intelligence Digital transformation Strategic management Competitive advantage Automation Innovation Organizational performance AI-driven decision support

ARTIFICIAL INTELLIGENCE AS A STRATEGIC PARTNER IN BUSINESS GROWTH

Ms. J. Steni

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: steniyeon@gamil.com

ABSTRACT

Artificial Intelligence (AI) can be regarded as a strategic business partner. This is because the technologies and processes involved in AI can be leveraged to transform the business industry. Some of the technologies associated with AI include machine learning, natural language programming, predictive analytics, and automation. The business partner can be utilized to augment the company's performance while accelerating its growth trajectory, profitability, and innovation. This can be achieved by transforming the organization through the power of data and intelligence. Through AI, businesses can fulfill their requirements of transformation while at the same time satisfying their customers' needs and expectations.

AI can also be used to empower these organizations to stay ahead of the competition while reducing costs and risks and at the same time increasing performance, profit, and productivity. This business partner is very powerful, and when harnessed properly, it can propel the organization to the top. However, AI comes with some security risks, ethical concerns, and technical problems that must be addressed. As a result, there is a need for responsible AI while at the same time ensuring that employees are adequately trained. This paper aims to provide insight into the potential of AI as a strategic business partner. It will also go further to examine how organizations can leverage this business partner to achieve

KEYWORDS

Business Growth, Strategic Decision-Making, Machine Learning, Data Analytics, Business Intelligence, Process Automation, Digital Transformation, Predictive Analytics, Customer Experience, Innovation, Operational Efficiency, Competitive Advantage, AI-Driven Strategy, Sustainable Business Growth.

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON CONSUMER BEHAVIOUR AND MARKETING STRATEGIES

Ms. A. Gowri

Department of Management Studies,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: gowri02324@gamil.com

ABSTRACT

Artificial Intelligence (AI) has transformed consumer behaviour and modern approaches to marketing by empowering organizations to address their clients' needs and wants effectively. Such technological advancements as machine learning, predictive analytics, chatbots, and recommendation systems can be employed to study the audience's purchasing behaviour. Advanced technologies enable marketers to personalize products and services according to customers' data. Moreover, artificial intelligence can be utilized in customer relationship management to provide virtual assistance to clients via chatbots or other methods. For example, artificial intelligence can collect and analyze the target audience's preferences and purchasing behaviour to identify their needs and wants. In addition, modern organizations use artificial intelligence to locate their target audience, recommend products, and provide discounts or other benefits. As a result, consumers can enjoy a pleasant experience while shopping online or visiting a store due to the precision of recommendation systems and virtual assistance via chatbots. On the other hand, companies can benefit by increasing their sales volume and providing high-quality support to their customers by using artificial intelligence technologies. However, using artificial intelligence technologies in marketing creates several ethical issues, such as collecting and utilizing the personal data of the target audience without their consent. Thus, it is essential for companies to invest in advanced technologies to increase sales volume while ensuring that they do not violate the privacy of the target audience. In conclusion, artificial intelligence has immensely changed the modern approach to marketing by enabling organizations to meet their customers' demands while increasing their satisfaction.

KEYWORDS

Artificial Intelligence (AI), Consumer Behaviour, Marketing Strategies, Machine Learning, Predictive Analytics, Personalized Marketing, Customer Experience, Customer Engagement, Digital Marketing, Big Data Analytics, Chatbots, Recommendation Systems, Data Privacy, Brand Loyalty, Business Growth.

A Study on the Impact of Artificial Intelligence in Marketing

Mr. P. Raghul¹, Mr. V. Purushothaman², Ms. M. Sevvanthi³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Assistant Professor, Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract

With the emergence of Artificial Intelligence (AI), companies can better perceive their clients and communicate with them. The technology allows firms to process the information about customers, make predictions about their buying habits, offer personalized recommendations, and take effective marketing decisions. Tools based on Artificial Intelligence such as chatbots, recommendation engines, and automatic advertising allow firms to give fast and adequate services to customers without spending too much money and time. Due to the rapid development of digital technology, Artificial Intelligence has become a necessary tool for modern marketing strategies. The purpose of the paper is to investigate the role of Artificial Intelligence in marketing, the ways of its application, advantages, and disadvantages. Furthermore, the paper reveals how Artificial Intelligence helps business organizations to create personal experiences of customers, increase their sales, and make data-driven decisions. Despite the vast number of opportunities provided by the technology, there are some issues related to data privacy, security, and usage that should be taken into consideration.

Keywords:

Artificial Intelligence (AI), Marketing, Digital Marketing, Machine Learning, Customer Experience, Consumer Behaviour, Personalization, Chatbots, Predictive Analysis, Big Data, Marketing Automation, Customer Relationship Management (CRM).

The Impact of AI Shopping Agents on Consumer Purchase Decisions in E-Commerce

Mr. S. Ajay¹, Ms. M. Sevvanthi²

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Assistant Professor, Department of Commerce, Christ Arts and Science College, Puducherry, India.

ABSTRACT

Artificial Intelligence or AI has revolutionized the process of online shopping. This technology allows us to receive personalized suggestions according to our tastes, helps us to find out what we need and allows us to interact with shopping assistants. AI shopping agents help us when making buying decisions by saving time searching and comparing different products and providing us with the products which will suit our taste. The current study examines the impact of AI shopping agents on the consumers' purchase decision-making process in the online environment. We will examine such aspects as the ability of AI agents to provide personalization, the level of trust of consumers with AI shopping agents, their satisfaction with the shopping process and their intentions to buy. We conducted research using the questionnaire and reviewed existing literature from various sources.

Keywords: Artificial Intelligence, AI Shopping Agents, E-commerce, Consumer Purchase Decision.

A STUDY ON THE COLLABORATION OF HUMAN AND ARTIFICIAL INTELLIGENCE

Mr. K. Nishal¹, Ms. M. Sevvanthi²

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Assistant Professor, Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence has become a part of modern marketing. It helps businesses understand what customers want for routine tasks and make marketing campaigns work better. Technologies like analytics, recommendation systems, chatbots and content generation help organizations make quick data-driven decisions. However, AI is not a replacement for marketers. They bring creativity, emotional intelligence, ethics and strategic thinking to the table. The future of marketing is about humans and AI working together not competing. This collaboration lets businesses use technology efficiently while adding a touch to create personalized customer experiences. AI analyzes consumer behavior identifies trends and optimizes campaigns. Human marketers focus on storytelling, building relationships, developing brands and making ethical decisions. This partnership boosts productivity, customer satisfaction and adaptability to market changes. Businesses that combine AI with expertise will likely have a stronger competitive edge in the digital marketplace. This study looks at the future of human-AI collaboration in marketing. It explores the opportunities, challenges and impact on business performance. The goal is to show how balancing technology with skills leads to sustainable marketing success. The findings will help businesses, marketers, researchers and students understand how AI can enhance capabilities. This understanding will help create marketing strategies that maintain customer trust and ethical responsibility.

Keywords

Artificial Intelligence (AI), Human–AI Collaboration, Marketing, Digital Marketing, Marketing Automation, Customer Experience, Consumer Behavior, Personalized Marketing, Machine Learning, Data Analytics, Customer Engagement, Business Performance.

A STUDY ON AI – BASED SMART SAVING AND INVESTMENT AMONG COLLEGE STUDENTS

Mr. K. Nishal¹, Ms. M. Sevvanthi²

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Assistant Professor, Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract

The present study shows the awareness about smart saving and investment of fund by using AI tools and assistants. AI helps to give investment recommendation and alert to stop your unwanted spending in daily life by this saving grows increases. The questionnaire and study were used to understand the knowledge and mindset of this generation college students about investment and savings by using the Ai tools. The findings and suggestion of this study gives whether Ai financial tools are really helps to make decision in saving and investment among college students.

Keywords: Artificial Intelligence, Smart Saving, Investment Decision, College Students, Financial literacy

A study on artificial intelligence, predictive analytics and consumer purchase behaviour

Mr. K. Nishal¹, Ms. M. Sevvanthi²

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Assistant Professor, Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) has mediating the every business by the data analytics to interact with consumers by providing personalized recommendations, intelligent chatbots, and automated customer services. These AI-powered technologies enable organizations to better understand customer needs and deliver improved shopping experiences. Predictive Data Analytics (PDA) further enhances these capabilities by analyzing consumer data, identifying purchasing patterns, and predicting future buying preferences. As a result, AI and predictive analytics have become important tools for influencing consumer purchase behaviour in the digital marketplace. The purpose of this study is to examine the impact of Artificial Intelligence on Consumer Purchase Behaviour and to investigate the mediating role of Predictive Data Analytics in this relationship. It was expected to reveal that Artificial Intelligence positively influences consumer purchase behaviour by improving personalization, convenience, trust, and customer satisfaction .To strengthen this relationship by providing of accurate product recommendations and personalized shopping experiences. The findings will help businesses understand how AI-driven technologies can improve marketing strategies, enhance customer engagement, and increase consumer loyalty. This research also contributes to the growing body of knowledge on AI used in marketing and business.

KEY WORDS :

Artificial Intelligence , Data analytics , Business , Marketing , Consumer .

A Study on the Future of Artificial Intelligence in Daily Money Decisions Among College Students

Mr. R. Reegan¹, Mr. G. Bharath², Ms. M. Sevvanthi³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Assistant Professor, Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence is taking an ever more important role in personal financial management. AI-powered applications help people to budget, save, invest and track expenses. This study explores the potential future use of AI in the daily money decisions of college students. Data will be collected through a structured questionnaire. This study explores students' knowledge, usage, benefits, and concerns of AI-based financial tools. The results will contribute to the knowledge of how AI can boost financial decision making while highlighting the challenges related to its adoption

Keywords

Artificial Intelligence (AI), Personal Finance, Money Management, Financial, Decision-Making, Budgeting

A study on the impact of autonomous AI agents on corporate governance: risks, ethics and accountability

Ms. B. Kaviya¹, Ms. M. Hemalatha², Ms. S. Rajeswari³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract:

In recent times, autonomous Artificial Intelligence (AI) agents have been gradually taking over the role of making decisions and governing the organization. Traditional governance systems based on human decision-making face several challenges in accountability, transparency, ethical control, and risk management. The present work investigates how autonomous AI agents impact corporate governance and mentions the necessity of creating proper governance frameworks for AI use. It also discusses the potential of AI in enhancing organizational processes by introducing innovations, making decisions, and providing information on risks along with the issues of algorithmic bias, safety of data, and human oversight. It is concluded that successful corporate governance in the age of AI calls for finding the right balance among the innovations introduced by AI, ethical obligations, and mechanisms of accountability.

Keywords: Autonomous AI Agents, Corporate Governance, Artificial Intelligence, AI Ethics, Risk Management.

A study on Economic Implications of AI Hallucinations in Business

Ms. C. Mathumitha

Department of Commerce,
Christ Arts and Science College, Puducherry, India.

Abstract

There has been widespread adoption of Generative Artificial Intelligence (GenAI) in business decision-making processes, but its accompanying hallucination (i.e., erroneous and unsubstantiated AI generated output) could also be emerging as economic risk. The research here analyses the impact of AI hallucinations on quality of financial decisions, efficiency in operation, and risk management in organizations. This conceptual study using secondary sources is to shed light on economic consequence of errors created by AI output, the mitigation strategy of those consequences, the emphasis of AI governance and human supervision and verification mechanism in business application of AI. The contribution this research makes is providing discussion and insight on finding the balance between innovation in AI application and reliability of the business operations, based on the emerging debate about the implementation of responsible AI.

Keywords: Generative AI, AI Hallucinations, Business Risk, Financial Decision-Making, AI Governance

A Study on Artificial Intelligence in Small Business Development and Startup Success

Abstract

This paper examines the extent to which small businesses and early-stage startups adopt artificial intelligence (AI) tools to support their development, and how such adoption relates to perceived business success. Data were collected from 60 founders and owner-managers of small enterprises and startups by means of a structured questionnaire supplemented by short semi-structured interviews. The gathered data were subjected to both quantitative and qualitative analysis. The results demonstrate that, on the one hand, a majority of respondents reported measurable benefits from AI adoption in areas such as marketing, customer support, and operational efficiency, together with heightened awareness of AI as a strategic lever for growth. On the other hand, a substantial proportion of the sample showed a rather intuitive, ad hoc, and cost-driven pattern of AI use, constrained by limited technical skills, budget, data-quality issues, and concerns regarding trust and regulation. The study concludes that AI contributes positively to small business development and startup success when it is adopted deliberately and integrated into decision-making, and that structured guidance, affordable tools, and capacity-building are needed to convert experimentation into sustained advantage.

Keywords: Artificial intelligence, small business development, startups, technology adoption, entrepreneurship, digital transformation.

**A STUDY ON THE ROLE OF ARTIFICIAL INTELLIGENCE IN BUSINESS
DECISION MAKING AND STRATEGY**

Ms. R. Boomika

Department of Commerce,
Christ Arts and Science College, Puducherry, India.

ABSTRACT

Artificial Intelligence (AI) has transformed the way that businesses make decisions and plan their strategies by allowing them to process large volumes of data quickly and accurately. Technologies like machine learning, predictive analytics and natural language processing can improve efficiency, reduce errors and help make better business decisions. AI also helps organizations gain a competitive edge through innovation, enhanced customer experiences and optimized operations. But successful implementation needs quality data, skilled professionals, and ethical governance. The study concludes that AI improves decision-making and business performance but should be used to support, not replace, human judgment in strategic and ethical situations..

KEYWORDS

Artificial Intelligence (AI), Business Decision-Making, Business Strategy, Machine Learning, Predictive Analytics, Data Analytics, Strategic Planning, Decision Support Systems.

A Study on the impact of Artificial Intelligence in Accounting and Finance

Mr. Athittian¹, Mr. Kishore², Mr. Vimal Raj³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) has emerged as a groundbreaking technology that is revolutionizing the operations of accounting and finance functions. It allows computer systems to undertake tasks that typically require human cognitive capabilities, such as analyzing financial information, identifying fraudulent activities, making informed decisions, and forecasting future financial patterns. In accounting, AI enhances processes like bookkeeping, invoice handling, auditing, and tax preparation, leading to increased efficiency and reduced human errors. In the finance industry, AI supports areas such as investment strategy, risk assessment, credit analysis, customer service, and financial predictions using machine learning and sophisticated analytical tools. This paper offers a conceptual examination based on information collected from secondary sources, including books, scholarly articles, corporate reports, government documents, and reputable online references.

Keywords: Artificial Intelligence, Accounting, Finance, Machine Learning, Automation, Financial Technology (FinTech), Data Analytics.

A STUDY ON THE FACTORS INFLUENCING CONTINUOUS USAGE OF MOBILE WALLET APPLICATION AMONG THE COLLEGE STUDENTS

Mr. Bonpapa David¹, Mr. Sridhar²

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

E-mail: davidbonpapa01@gmail.com¹, sriofficial1308@gmail.com²

ABSTRACT

The fast growth of digital payment technologies has brought about a significant change in the financial spending behavior of customers, especially those ones who are students and use their smartphones and mobile applications quite often. The aim of this study is to analyze what influences the usage of mobile wallet applications by college students. The research is based on the following determinants: perceived usefulness, perceived ease of use, trust, security, social influence, satisfaction and promotional benefits. In the study, a quantitative research method was used with the help of a structured questionnaire. Data were gathered from college students and analyzed statistically to determine the correlation between influencing factors and students' intentions to continue using mobile wallets. The research results show that perceived usefulness, ease of use, trust, security and satisfaction have a positive influence on college students, as well as social influence and promotional offers.

KEYWORDS

Mobile Wallet, Continuous Usage, College Students, Digital Payments, Perceived Usefulness, Perceived Ease of Use, Trust, User Satisfaction, Technology Adoption.

THE STUDY ON AI ROLE IN CYBER SECURITY AND DIGITAL PRIVACY

Ms. S. Sanjeetha¹, Ms. M. Kaviya², Ms. A. Oviya³

¹Department of Commerce, Christ Arts and Science College, Puducherry, India.

²Department of Commerce, Christ Arts and Science College, Puducherry, India.

³Department of Commerce, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence (AI) has established itself as a critical resource in combating cybersecurity attacks and securing digital technology from current threats. AI allows collecting data regarding attacks much quicker and expediting the process of responding to incidents, detecting malware, thus improving the overall effectiveness of cybersecurity programs. That being said, the increasing deployment of AI causes some concerns regarding digital privacy, including how companies collect, store, and utilize private information and the issues related to surveillance and data protection in general. In this context, the current paper sets the goal of analyzing the role of AI in enhancing cybersecurity and understanding its impact on digital privacy. It describes the benefits of using AI in cybersecurity applications, thus revealing both its strengths and weaknesses that have to be considered in terms of privacy. The conclusion points out that only responsible use of AI combined with strict regulations regarding privacy and ethical aspects of operations, as well as implementing effective cybersecurity programs would help develop the environment that will respect privacy and ensure cybersecurity.

Keywords:

Artificial Intelligence (AI), Cybersecurity, Digital Privacy, Cyber Threats, Data Protection, Privacy, Machine Learning, Information Security.

AI in Language, Literature, and Digital Communication

Ms. R. Jayasri

Department of English,

Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: jayasrigayu31@gmail.com

Abstract

Artificial Intelligence (AI) has become a powerful technology that is transforming the fields of language, literature, and digital communication. AI-powered tools such as machine translation, chatbots, grammar checkers, and content generation systems help people communicate more effectively across different languages and cultures. In the field of language learning, AI provides personalized learning experiences, instant feedback, and interactive practice, making education more accessible and engaging. In literature, AI is used to analyze literary texts, identify themes and writing styles, and even assist in creating poems, stories, and other creative works. While AI enhances creativity and improves research, it also raises important questions about originality, authorship, and ethical use. In digital communication, AI has changed the way people interact through social media, emails, virtual assistants, and online platforms by enabling faster, smarter, and more personalized communication. However, concerns such as misinformation, privacy, bias, and overdependence on AI highlight the need for responsible and ethical implementation. This paper explores the growing role of AI in language, literature, and digital communication by examining its applications, benefits, challenges, and future possibilities. It also discusses how AI can support human creativity and communication without replacing human intelligence, critical thinking, or emotional understanding. The study concludes that AI should be viewed as a collaborative tool that enhances learning, creativity, and communication while ensuring ethical standards and preserving the unique value of human expression. As AI continues to evolve, maintaining a balance between technological advancement and human values will be essential for its effective and responsible use.

Keywords

Artificial Intelligence (AI), Language Learning, Literature, Digital Communication, Natural Language Processing (NLP), Machine Translation, Generative AI, Digital Humanities, Ethical AI, Sustainable Development.

AI and Machine Learning Applications

Ms. K. Vishali

Department of English,

Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: pinkyvishu2@gmail.com

Abstract

Introduction Artificial Intelligence (AI) and Machine Learning (ML) have become transformative technologies that are reshaping industries, improving decision-making, and supporting sustainable development across science, business, and the humanities. AI refers to the ability of machines to perform tasks that normally require human intelligence, while ML is a branch of AI that enables systems to learn from data and improve their performance without explicit programming. These technologies have significantly influenced healthcare, education, agriculture, finance, manufacturing, transportation, and environmental management by increasing efficiency, accuracy, and innovation. In healthcare, AI assists in disease diagnosis, medical image analysis, and personalized treatment planning. In agriculture, AI-based systems help farmers monitor crop health, predict weather patterns, and optimize resource usage. Businesses use AI to enhance customer experience, automate routine operations, detect fraud, and improve decision-making through predictive analytics. In education, AI supports personalized learning, intelligent tutoring systems, and automated assessments. Environmental applications include climate monitoring, energy optimization, waste management, and disaster prediction, contributing to global sustainability goals.

Keywords:

Artificial Intelligence (AI), Machine Learning (ML), Deep Learning, Data Analytics, Healthcare, Smart Agriculture, Business Intelligence, Education Technology, Sustainable Development, Automation, Internet.

TOURISM, HOSPITALITY, AND SERVICE INNOVATION

Ms. T. Vinita

Department of English,

Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: vinithat759@gmail.com

Abstract

Tourism and hospitality are among the fastest-growing industries in the world. They play an important role in economic development by creating employment opportunities, supporting local businesses, and promoting cultural exchange. In recent years, rapid technological development has changed the way people travel and experience hospitality services. As a result, service innovation has become an important factor in improving customer satisfaction and business performance. This paper examines the role of service innovation in the tourism and hospitality industry with special attention to the use of Artificial Intelligence (AI). AI technologies such as chatbots, online booking systems, smart hotels, digital payment methods, and personalized travel recommendations help businesses provide faster, more efficient, and customer-friendly services. The paper also explains how innovation supports sustainable tourism by reducing waste, improving resource management, and encouraging responsible travel. However, adopting new technologies also brings challenges, including high implementation costs, employee training, data privacy, and cybersecurity concerns. The study concludes that combining AI, business strategies, and customer-focused service innovation can improve the quality of tourism and hospitality services while supporting sustainable development. Continuous innovation is essential for meeting changing customer expectations and ensuring long-term growth in the industry.

Keywords

Tourism, hospitality, service innovation, artificial intelligence (AI), customer experience, digital transformation, sustainable tourism, smart tourism.

Collaborative Models for Social Impact

Mr. B. Ganesh

Department of English,
Christ Arts and Science College, Moolakulam, Puducherry, India.
E-mail: ganeshsuresh761@gmail.com

Abstract

In today's interconnected world, social challenges such as poverty, climate change, educational inequality, healthcare accessibility, and unemployment cannot be solved by a single organization or institution. These complex issues require collaborative efforts involving governments, businesses, non-governmental organizations (NGOs), academic institutions, and local communities. Collaborative models promote shared responsibility, innovation, and efficient use of resources to create sustainable solutions. This paper explores the concept of collaborative models for social impact, discusses various forms of collaboration, examines their benefits and challenges, and presents practical examples from different sectors. The paper concludes that collaboration is a powerful strategy for achieving sustainable development and improving the quality of life for communities worldwide.

Keywords:

Collaboration, Social Impact, Sustainable Development, Partnerships, Innovation, Community Development.

Transdisciplinary Research Methodology

Mr. G. Perumalsanjai

Department of English,

Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: gperumalsanjai@gmail.com

Abstract

Transdisciplinary Research Methodology has emerged as a transformative approach to addressing the increasingly complex challenges of the twenty-first century. Traditional research approaches often remain confined within individual academic disciplines, making it difficult to understand and solve multidimensional issues such as climate change, artificial intelligence governance, public health, sustainable development, and social inequality. Transdisciplinary research overcomes these limitations by integrating knowledge, theories, methods, and perspectives from multiple disciplines while actively involving stakeholders such as policymakers, industry experts, practitioners, and local communities throughout the research process. This collaborative approach enables the co-creation of knowledge and the development of practical, innovative, and sustainable solutions. In the context of the conference theme, Innovating for Impact: AI-Driven Pathways Integrating Science, Business and Humanities for a Sustainable Future, transdisciplinary research provides a comprehensive methodological framework for integrating technological innovation with social responsibility, business strategy, and human values. This paper examines the concept, principles, characteristics, research process, significance, advantages, and challenges of transdisciplinary research methodology. It argues that this methodology enhances research quality by encouraging collaboration across disciplinary boundaries and by ensuring that research outcomes are socially relevant, ethically responsible, and practically applicable. The paper concludes that transdisciplinary research methodology represents a significant advancement in research practice and serves as an essential approach for generating knowledge capable of addressing complex global challenges and promoting sustainable development.

Keywords:

Transdisciplinary Research Methodology, Knowledge Integration, Artificial Intelligence, Collaboration, Sustainable Development, Innovation, Research Methodology.

AI-Enabled Learning and Pedagogy

Ms. G. Jayasankari

Department of English,

Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: jayasankari2412@gmail.com

Abstract

Artificial Intelligence (AI) is transforming education by creating innovative learning environments that improve teaching, learning, assessment, and academic administration. AI-enabled learning and pedagogy encourage personalized education, adaptive learning experiences, and interdisciplinary collaboration among science, business, and humanities. By integrating AI into education, institutions can prepare learners with critical thinking, problem-solving, creativity, digital literacy, and ethical decision-making skills required for a sustainable future. AI-powered educational technologies provide real-time feedback, automate administrative tasks, and assist educators in designing learner-centered instructional strategies. However, the adoption of AI also presents challenges such as data privacy, algorithmic bias, digital inequality, and ethical concerns. This paper explores the significance of AI-enabled learning, its applications across disciplines, opportunities for sustainable development, challenges in implementation, and recommendations for responsible AI integration. The study concludes that AI should complement rather than replace educators and should be implemented with human values, inclusivity, transparency, and ethical governance to build an equitable and sustainable education system.

Keywords:

Artificial Intelligence, AI-enabled Learning, Pedagogy, Sustainable Development, Interdisciplinary Education, Digital Learning, Innovation.

Tourism, Hospitality and Service Innovation

Ms. B. Pradeepa

Department of English,

Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: harshinipradeepa75@gmail.com

Abstract

Artificial Intelligence (AI) is transforming the tourism, hospitality, and service sectors by improving operational efficiency, enhancing customer experiences, and supporting sustainable development. The integration of science, business, and humanities enables organizations to adopt innovative technologies while maintaining ethical values, cultural preservation, and environmental responsibility. AI-driven technologies such as machine learning, predictive analytics, robotics, chatbots, facial recognition, and personalized recommendation systems are reshaping the way tourism and hospitality services are delivered. These technologies help optimize resource utilization, reduce operational costs, minimize environmental impacts, and provide customized experiences to travelers. However, the adoption of AI also raises concerns regarding data privacy, cybersecurity, employment displacement, and ethical decision-making. This paper explores the role of AI in promoting sustainable tourism, hospitality, and service innovation by integrating interdisciplinary perspectives. It highlights opportunities, challenges, and future directions for developing intelligent, inclusive, and environmentally responsible tourism systems. The study concludes that AI, when combined with scientific innovation, business strategy, and human-centered values, can contribute significantly to achieving sustainable development goals in the tourism industry.

Keywords:

Artificial Intelligence, Sustainable Tourism, Hospitality Management, Service Innovation, Machine Learning, Smart Tourism, Digital Transformation, Sustainability.

AI AND MACHINE LANGUAGE

Ms. M. Vinodhini

Department of English,

Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: v98621829@gmail.com

Abstract

Artificial Intelligence (AI) and Machine Learning (ML) have emerged as transformative technologies capable of addressing complex global challenges through interdisciplinary collaboration. The integration of science, business, and humanities creates innovative pathways that support sustainable development by improving decision-making, optimizing resource utilization, and promoting ethical innovation. AI is increasingly applied in healthcare, environmental monitoring, education, agriculture, finance, and smart governance, while ML enables predictive analytics, automation, and personalized solutions. However, the rapid adoption of AI also raises concerns related to privacy, algorithmic bias, transparency, employment, and digital inequality. This paper explores the role of AI and ML applications in fostering sustainability through the integration of scientific advancements, business innovation, and human-centered values. Using a qualitative review of existing literature and real-world case studies, the study highlights opportunities, challenges, and future directions for responsible AI implementation. The findings emphasize that sustainable innovation requires not only technological excellence but also ethical governance, inclusive policies, interdisciplinary collaboration, and digital literacy. The paper concludes that AI-driven innovation has the potential to create a resilient, equitable, and sustainable future when technological progress is aligned with human values and environmental responsibility.

Keywords:

Artificial Intelligence, Machine Learning, Sustainability, Science, Business, Humanities, Digital Innovation, Ethical AI. Artificial Intelligence and Machine Learning.

Generative AI and large language models

Ms. P. Radhai

Department of English,
Christ Arts and Science College, Moolakulam, Puducherry, India.
E-mail: radhai16@gmail.com

Abstract

Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the twenty-first century, reshaping industries, education, research, and society. Among recent developments, Generative Artificial Intelligence (Generative AI) and Large Language Models (LLMs) have revolutionized the way humans create, analyze, and communicate information. These technologies can generate human-like text, summarize knowledge, assist scientific research, improve business operations, and support education and public services. This paper examines how Generative AI and Large Language Models contribute to sustainable development by integrating science, business, and the humanities. It explores their applications in scientific innovation, business transformation, healthcare, education, environmental sustainability, and digital communication while also addressing ethical concerns such as bias, misinformation, privacy, transparency, and responsible AI governance. The paper adopts an interdisciplinary perspective to demonstrate that AI should not replace human intelligence but complement it by encouraging collaboration across disciplines. The study concludes that the future of sustainable development depends on the responsible, ethical, and inclusive use of Generative AI and LLMs, supported by appropriate policies, education, and human oversight.

Keywords:

Generative AI, Large Language Models, Artificial Intelligence, Sustainability, Science, Business, Humanities, Digital Communication, Innovation, Ethics.

**Innovating for Impact: AI- Driven Pathways: Integrating Science, Business and Humanities
for a Sustainable Future**

Ms. U. Abinaya

Department of English,
Christ Arts and Science College, Moolakulam, Puducherry, India.

E-mail: ramkiabinaya1312@gmail.com

Abstract

Artificial Intelligence (AI) has emerged as one of the most influential technologies of the twenty-first century, transforming various aspects of human life, including language, literature, and digital communication. AI-powered technologies such as Natural Language Processing (NLP), machine learning, and generative AI have revolutionized the way people create, interpret, and share information. In language studies, AI enhances translation, language learning, grammar correction, and speech recognition, making communication more accessible and efficient. In literature, AI assists writers, researchers, and readers through automated text analysis, creative writing, digital archiving, and literary preservation. Digital communication has also undergone significant transformation through AI-driven chatbots, personalized content recommendations, automated customer support, and intelligent social media management. While AI offers numerous advantages such as increased productivity, accessibility, and innovation, it also presents challenges related to ethics, misinformation, copyright, privacy, and employment. This paper explores the impact of AI on language, literature, and digital communication while emphasizing the need for responsible and ethical AI practices. The study argues that AI should complement rather than replace human creativity and critical thinking. By integrating scientific innovation with business applications and humanistic values, AI has the potential to create a sustainable and inclusive future for education, communication, and society.

Keywords:

Artificial intelligence, Natural Language Processing, Language, Literature, Digital communication, Machine Learning, Generative AI, Sustainability.

**Technology-Driven Approaches for Achieving Sustainable Development Goals (SDGs): The
Role of Artificial Intelligence and Digital Innovation**

Mr. Gautam Krishna Mandal

Department of English,
Christ Arts and Science College, Moolakulam, Puducherry, India.
E-mail: gautampkm@gmail.com

Abstract

The Sustainable Development Goals (SDGs), adopted by the United Nations in 2015, provide a global framework for addressing challenges such as poverty, inequality, climate change, quality education, and sustainable economic growth by 2030. Rapid advancements in Artificial Intelligence (AI), the Internet of Things (IoT), Big Data, cloud computing, and blockchain have transformed the way societies approach these challenges. These technologies improve decision-making, optimize resource utilization, and promote inclusive development across various sectors. This paper examines how technology-driven approaches contribute to achieving the SDGs while highlighting the ethical concerns and challenges associated with technological dependence. It concludes that innovation, when combined with responsible governance and digital inclusion, can significantly accelerate sustainable development.

Keywords:

Sustainable Development Goals, Artificial Intelligence, Digital Innovation, Smart Technology, Sustainability.

A STUDY ON THE ROLE ON ARTIFICIAL INTELLIGENCE IN TRANSFORMING MODEN EDUCATION

Mr. R. Mohandoss¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: dossmohan997@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

Abstract The world of education is transforming with the coming of Artificial Intelligence. It makes education customizable, enjoyable and effective thanks to machine learning and language processing technology. Some of the various facets of technology applied to the educational process are discussed in this paper. Among them are: assessing performance, making suggestions concerning learning and teaching process, providing comments and advice. The paper presents a thorough analysis of the advantages and disadvantages of the application of Artificial Intelligence in education, the main problem being ethics. The research carried out provides useful information for further studies since the prospects for this kind of technology are immense. However, the issues such as data security, cost issues or difficulty with technology must be addressed first.

KEY WORDS

Artificial Intelligence (AI), AI Enabled Learning, Pedagogy, Personalized Learning, Machine Learning, Learning Analytics, Intelligent Tutoring Systems, Educational Technology

A STUDY ON CIRCULAR ECONOMY AND BUSINESS MODEL INOVATION

Mr. T. Gowtham¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: barveen131@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

The circular business model is an eco-friendly substitute to conventional taking, making and disposing of goods. The circular business model intends to design goods and services which increase the life cycles of goods, recover values and reduce ecological effect. By applying terms, like resource efficiency, closed loop economies, product-as-service, and waste reduction, firms can enhance the level of competition and contribute to sustainable development be higher accessibility of resources and reduced carbon emissions. Given the rise of environmental restrictions and limitations in available resources, implementing the circular business model appears to be the right way to sustainable economic development and responsible production/consumption trends in the future.

KEYWORDS

Circular Economy, Cut down, Utilize again, Reprocess, Fix, Recondition, Restore, Retrieve, Sustainable, Progress, Effective Use of Resources, Waste Decrease, Longer Product life, Sealed System Environmentally Sound

A STUDY ON AI AND MACHINE LEARNING DRIVING DIGITAL TRANSFORMATION ACROSS INDUSTRIES

Mr. P. Kamalesh¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: kamaleshkamlesh568@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

Technological processes that help digitize businesses come under the framework of Artificial Intelligence (AI) and Machine Learning (ML) that incorporate both theoretical and practical requirements of computing. This paper discusses the multidisciplinary approaches of AI and ML that should be used primarily for such purposes as digital transformation, automation of cognitive business models, and decision-making processes that depend on data processing. Among major concepts that should be used in this context, it is necessary to highlight such types of learning as supervised learning, unsupervised learning, and reinforcement learning due to the fact all of them can be considered together.

We analyse the implementation of these technologies in various industries, such as healthcare (in predictive diagnostics), banking and finance (in algorithmic trading), and retail (in supply chain management). It should be noted that by means of the development of these technologies, customers receive their own algorithms for solving their problems and opportunities for enhancing business efficiency along with raising people's productivity. At the same time, despite great progress, there are still some challenges concerning the use of such technologies, including computational power, cost efficiency, and ethical considerations, including the issues connected with AI and the use of human capital.

KEYWORD

Artificial Intelligence, Machine Learning, Predictive Analytics, Generative AI, Deep Learning, Automation, Operational Optimization.

A STUDY ON SUSTAINABLE DEVELOPMENT GOALS CHALLENGES IMPLEMENTATION AND FUTURE PROSPETS

Mr. P. Akash¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: akashpavi555@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

The Sustainable Development Goals (SDGs) represent a set of 17 goals defined in 2015 by the UN in connection with the General Assembly's 2030 Agenda for Sustainable Development. The SDGs are directed at an assortment of various global issues, like poverty, hunger, inequality, underdevelopment in health, bad education, climate change, destruction of the environment, and the need for peace and justice. The SDGs create a universal template for economic growth without losing either inclusion and sustainability.

The implementation of the SDGs must be achieved through all parties involved, thus playing their role in this project. The main input for the achievement of the goals should be made through creative ideas, responsible consumption, sustainable usage of resources, and international collaboration.

KEYWORDS

Sustainable Development Goals (SDGs), economic growth, environmental sustainability, social inclusion, reduction of poverty level, provision of quality education, ensuring gender equality

THE ROLE OF ARTIFICIAL INTELLIGENCE IN MODERN MARKETING ANALYTICS AND EVOLVING CONSUMER BEHAVIOUR

Mr. P. Dinesh¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: dineshpy29@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

Artificial Intelligence (AI) is developing rapidly and significantly changes marketing methodologies and consumer behaviour in different industries. Ai-based solutions such as machine learning systems, predictive analytics, recommendation tools, chatbots, and personalized advertisements give businesses power to have a better understanding of their customers' needs, forecasting their purchases and providing tailored services. Moreover, consumers today are more knowledgeable and technologically connected and rely more on AI-enabled interactions during the purchase process. The analysis will define the role of AI in modern marketing analysis and consumer behaviour. The methodology of research will investigate the possibilities of improving segmentation in marketing, making better decisions, engaging customers and satisfying their needs with the help of AI.

KEYWORDS

Artificial Intelligence (AI), Marketing analytics, Consumer behaviour, Real-time intent, Predictive and prescriptive analytics, Machine learning models, Customer lifetime value (CLV), Churn prediction, Hyper- personalization, AI-based agents.

A STUDY ON ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN EVERYDAY LIFE

Mr. D. Thamaraich Selvan¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: selvandthamaraich@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

Artificial Intelligence (AI) and Machine Learning (ML) have made a transition from solutions focused on performing specific tasks to being the main engines supporting automation processes in the world. The study describes the basic facts about AI and ML along with the reasons of their transitioning from the legacy-bound tools to self-learning systems. The paper describes the most important domains where AI and ML are applied including predictive diagnostics in medicine, automated underwriting in finance, computer vision in autonomous systems, and natural language processing.

Besides, it is important to mention that the research emphasizes the modern trends such as multimodality (ability to use different types of data at the same time) and “agentic AI”—which presupposes a possibility for AI to work independently while implementing tasks, but this is very difficult to achieve.

This study offers novel techniques used to implement the technologies in practice, such as Parameter-Efficient Fine-Tuning (PEFT), Retrieval-Augmented Generation (RAG), and edge computing. Special attention is drawn to obstacles faced while using these methods such as the “black box” issue, vulnerability in terms of data protection, the problem of algorithmic drift, as well as the economic and environmental costs connected with using

KEYWORD

Artificial Intelligence, Machine Learning, Predictive Analytics, Generative AI, Deep Learning, Automation, Operational Optimization.

A STUDY ON THE ROLE OF DIGITAL TRANSFORMATION AND INNOVATION ECOSYSTEM IN ENHANCING ORGANIZATION COMPETITIVENESS

Ms. R. Subisha¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: sudishasubi@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

An organization's ability to succeed in the new digital environment is facilitated by digital transformation and innovation ecosystems. Technologies such as Artificial Intelligence, cloud computing, big data, and the Internet of things allow companies to operate in a more efficient way, shape new kinds of businesses, and provide a higher value to customers. Innovation ecosystems contribute to this transformation of companies by ensuring collaboration between business, government, research institutions, startups, and providers of technology.

This research studies the importance of digital transformation and innovation ecosystems in the context of innovation, competitiveness, and sustainable development. Digital culture, security, and other aspects will be addressed, leading to the identification of major opportunities and challenges in the field. A proper use of the digital strategy along with the assistance of solid partners in the environment can help companies achieve success in the digital era.

KEY WORDS

Digital transformation, innovation ecosystems, digital innovation, artificial intelligence, cloud computing, big data, Internet of things, digital strategy, sustainable development

TECHNOLOGY-DRIVEN APPROACHES FOR ACHIEVING SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Mr. A. Arun¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: aarun82161@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

Sustainable Development Goals (SDGs) have become an important global framework for addressing economic, social, and environmental challenges. The rapid advancement of technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), blockchain, cloud computing, big data analytics, and renewable energy systems has created new opportunities to accelerate sustainable development. These technologies support governments, industries, educational institutions, and communities by improving decision-making, increasing operational efficiency, enhancing resource utilization, and promoting environmental conservation. Despite these benefits, several challenges remain, including limited digital infrastructure, cybersecurity concerns, high implementation costs, inadequate technical expertise, and policy limitations.

This study examines how technology-driven solutions contribute to achieving the Sustainable Development Goals across different sectors. A mixed-method research approach is adopted by combining secondary research findings with analytical observations. The study also presents sample statistical data, performance analysis, and implementation strategies to understand the impact of emerging technologies on sustainable development. The findings indicate that organizations adopting digital technologies experience improved productivity, reduced environmental impact, enhanced public service delivery, and better resource management. The paper concludes that continuous technological innovation, effective governance, and collaborative partnerships are essential for achieving long-term sustainability.

Keywords

Sustainable Development Goals (SDGs), Artificial Intelligence, Internet of Things, Blockchain, Smart Technologies, Digital Transformation, Sustainability, Renewable Energy.

THE ROLE OF SMART GRID COMMUNICATION AND CONTROL TECHNOLOGIES IN FACILITATING DECENTRALIZED RENEWABLE ENERGY NETWORKS

Mr. G. Guna¹, Mrs. S. Nandhini²

¹Department of B.Com (Professional Accounting), Christ Arts and Science College,
Puducherry, India.

²Head, Assistant Professor, Department of Professional Accounting, Christ Arts and Science
College, Puducherry, India.

E-mail: gunalokesh2008@gmail.com¹, nandhinisashvi@gmail.com²

ABSTRACT

The growth in the demand for electricity together with the negative effects of traditional energy sources on the environment have compelled people to adopt renewable energy systems and smart grid technology. Renewable energy systems such as wind, solar, hydro and bioenergy are clean and sustainable alternatives to fossil fuels. The intermittent nature of renewable energy represents an obstacle to ensuring a stable power supply. Smart grid technology utilizes communication, monitoring and control techniques in order to solve all problems related to the supply of power. They give an opportunity to manage and distribute power efficiently, respond to consumption needs from the consumer's side, and integrate renewable energy sources into the electrical power network.

The application of smart grid technology improves quality of electricity production and supply, strengthens reliability of the power supply, and decreases losses in the transmission. Thus, renewable energy systems and smart grids are an important component of obtaining energy efficiency, decreasing greenhouse emissions, and building a sustainable energy future. The aim of the article is to investigate the advantages, significance and challenges of merging renewable energy sources with smart grid technologies.

KEYWORD

Renewable Energy Systems (RES), Renewable Energy Sources, Solar Energy, Wind Energy, Hydropower (Water Energy), Biomass Energy, Geothermal Energy, Sustainable Energy, Greenhouse Gas (GHG) , Emission

AI GOVERNANCE AND REGULATORY FRAMEWORKS:

Ms. M. Arthi Pradhan¹, Ms. R. Anitha², Ms. M. Sevvanthi³

¹Department of B.Com (General), Christ Arts and Science College, Puducherry, India.

²Department of B.Com (General), Christ Arts and Science College, Puducherry, India.

³Assistant Professor, Department of Commerce, Christ Arts and Science College,
Puducherry, India.

ABSTRACT

The emergence of Artificial Intelligence (A.I.) has heralded a new epoch in which this technology has become indispensable in numerous spheres of human activity including industries, agencies, services, and individuals. A.I. is now applied in many different areas, such as medicine, finance, education, production, etc. Consequently, it enhances efficiency, provides people with required decision-making assistance, and helps create innovations in many different fields. However, development of A.I. has also led to the emergence of new problems related to such issues as data privacy, algorithms' bias, transparency and responsibility, cybersecurity, and ethical use of technology. In this view, regulations aimed at proper governance of A.I. should be implemented in order to combat the existing problems.

KEYWORDS

Fairness, Accountability, Transparency, Privacy, data privacy, data protection, cyber security

**Artificial Intelligence and Consumer Behaviour: Influencing Purchase Intention Towards
Electric Cars for a Sustainable Future**

¹Mr.Saravanan.A

Assistant Professor

Easwari Engineering College

E-mail: saravanan.a@eec.srmrmp.edu.in

Abstract

The global transition towards sustainable transportation has significantly increased the demand for Electric Vehicles (EVs), making it essential to understand the factors that influence consumers' purchase decisions. Simultaneously, Artificial Intelligence (AI) is transforming the way consumers search, evaluate, and purchase automobiles by providing personalized recommendations, predictive analytics, virtual assistants, and intelligent marketing strategies. This study aims to examine how consumer behaviour influences the purchase intention of electric cars in the context of AI-enabled decision-making and sustainable development.

The research integrates the Technology Acceptance Model (TAM) with consumer behaviour theories to investigate the impact of Perceived Usefulness, Perceived Ease of Use, Consumer Ethics, Eco-friendly Orientation, and Environmental Concern on consumers' intention to purchase electric cars. AI-driven digital marketing platforms, recommendation systems, and online consumer engagement are considered as technological enablers that influence information search, product evaluation, and purchase decisions. The study also highlights the role of sustainability awareness and environmental responsibility in encouraging consumers to adopt electric mobility.

A quantitative research approach is proposed using a structured questionnaire administered to prospective automobile consumers. The collected data will be analysed using appropriate statistical techniques to examine the relationships among the identified variables and purchase intention. The findings are expected to provide valuable insights for automobile manufacturers, policymakers, marketers, and AI-based digital platforms in designing effective consumer-centric strategies that accelerate electric vehicle adoption. The study contributes to the growing body of knowledge on AI-enabled consumer behaviour while supporting Sustainable Development Goals (SDGs) related to clean energy, responsible consumption, climate action, and sustainable cities.

Keywords : Artificial Intelligence (AI) ,Consumer Behaviour , Electric Cars ,Purchase Intention ,Technology Acceptance Model (TAM) ,Perceived Usefulness ,Perceived Ease of Use ,Consumer Ethics ,Eco-friendly Orientation ,Environmental Concern ,Sustainable Development Goals (SDGs) ,Green Mobility ,AI-driven Marketing ,Sustainable Transportation.

The Impact of Fin-tech and Digital Financial Services on Financial Inclusion in India

Mr. Manikandan. S

Research Scholar

SRM Institute of Science and Technology, Chennai

mksmanikandan3@gmail.Com

Research Supervisor

Dr. P.Sivasakkaravarthi.

SRM Institute of Science and Technology, Chennai

sivavasakp@Srmist.Edu.In

Abstract

Especially in emerging nations like India, financial inclusion is a major force behind equitable and sustainable economic growth. Many people still have difficulty accessing formal financial services, particularly those who live in rural and economically disadvantaged areas, despite the banking industry's tremendous advancements. The financial ecosystem has changed as a result of the rise of digital financial services and financial technology (FinTech), which offer creative, accessible, and reasonably priced solutions. By examining digital payment systems, mobile banking, Unified Payments Interface (UPI), digital lending, InsurTech, Aadhaar-enabled Payment Systems (AePS), the India Stack, and important government initiatives, this chapter explores the role of FinTech in advancing financial inclusion in India. The chapter demonstrates how FinTech has increased digital financial knowledge, lowered transaction costs, improved financial access, and empowered By examining digital payment systems, mobile banking, Unified Payments Interface (UPI), digital lending, InsurTech, Aadhaar-enabled Payment Systems (AePS), the India Stack, and important government initiatives, this chapter explores the role of FinTech in fostering financial inclusion in India. The chapter emphasises how FinTech has strengthened digital financial literacy, decreased transaction costs, increased financial access, and empowered marginalised populations. The difficulties of cybersecurity, data privacy, digital infrastructure, and regulatory compliance are also covered, with a focus on the necessity of teamwork in creating a safe, inclusive, and long-lasting digital financial ecosystem in India.

Key words: Unified Payments Interface (UPI), QR code payments, digital lending, robo-advisory services, blockchain.

AI IN BUSINESS DECISION MAKING AND STRATEGY

Mrs. V. Jeevalakshmi

Assistant Professor of Commerce,

Rajiv Gandhi Arts and Science College, Puducherry.

Mr. Abdulhameed .A.

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

ABSTRACT

In today's interconnected world, Artificial Intelligence (AI) stands at the center of innovation, linking business, science, humanities, and sustainability. AI is transforming how organizations make decisions and develop strategies by turning complex data into meaningful insights. Earlier, decision-making depended mainly on human judgment and limited information, which often led to delays or uncertainty. Now, AI provides faster, smarter, and more reliable support.

The visual representation of AI connected with business and sustainable growth highlights its real-world importance. AI tools such as machine learning and data analytics help organizations predict trends, understand customer needs, and improve strategic planning. For instance, businesses can use AI to optimize operations, reduce risks, and create long-term sustainable strategies that align with environmental and social goals.

This study focuses on how AI supports better decision-making and strategic growth while connecting multiple fields. In conclusion, AI is not replacing humans but enhancing their abilities. By combining technology with human insight, organizations can achieve smarter decisions, stronger strategies, and a more sustainable future.

Key Words: Artificial Intelligence (AI), Decision Making ,Business Strategy ,Machine Learning ,Sustainable Development.

FINTECH, DIGITAL PAYMENT AND FINANCIAL ANALYTICS

Mr. Albert Joseph Raj

Assistant Professor of Commerce

Rajiv Gandhi Arts and Science College, Puducherry.

Mr. G. Akshay Kumar

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

Mr. K. Devaraj

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

ABSTRACT

Financial Technology (Fintech) is transforming the financial industry by combining finance with modern technologies such as Artificial Intelligence (AI), Block chain, cloud computing, big data, and mobile applications. It has changed the way people access banking services, transfer money, make payments, invest, and manage their finances. One of the most significant developments in Fintech is the growth of digital payment systems, including UPI, internet banking, mobile wallets, debit cards, credit cards, NEFT, RTGS, and IMPS. These systems provide fast, secure, and convenient cashless transactions while improving transparency and reducing operational costs. Financial analytics is another important component of Fintech. It involves collecting and analysing financial data to support better decision-making, detect fraud, manage financial risks, understand customer behaviour, and improve business performance. Advanced technologies such as AI and machine learning help organizations analyse large amounts of financial data quickly and accurately. This paper discusses the concepts, technologies, applications, benefits, challenges, and future scope of Fintech, digital payments, and financial analytics. It also highlights the role of these innovations in promoting financial inclusion, enhancing customer experience, and supporting economic growth. Although challenges such as cybersecurity threats, privacy concerns, and digital fraud remain, continuous technological advancements are making financial systems more secure and efficient. Overall, Fintech, digital payments, and financial analytics are shaping the future of the global financial sector and contributing to the development of a smarter and more inclusive digital economy.

Keywords: Fintech, Block chain, Big data, UPI, Digital Payment, Financial Analytics, Digital Banking, Mobile Wallets

MARKETING ANALYTICS & CONSUMER BEHAVIOUR IN THE AI ERA

Ms. G. Gopika

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry

Ms. K. Durgadevi

II B. COM (General)

Rajiv Gandhi Arts and Science College, Puducherry.

Ms. A. Dharshini

II B. COM (General)

Rajiv Gandhi Arts and Science College, Puducherry.

ABSTRACT

Artificial Intelligence (AI) has revolutionized modern marketing by transforming the way organizations collect, analyse, and utilize customer data. Marketing analytics, supported by AI technologies such as machine learning, predictive analytics, natural language processing, and recommendation systems, enables businesses to gain deeper insights into consumer behaviour, forecast market trends, and develop highly personalized marketing strategies. Unlike traditional marketing approaches, AI-powered analytics processes large volumes of structured and unstructured data in real time, allowing organizations to understand customer preferences, improve campaign performance, and make faster, evidence-based decisions. Consumers also benefit through personalized recommendations, improved customer service, dynamic pricing, and seamless digital shopping experiences. However, the increasing use of AI in marketing also raises important concerns regarding data privacy, cybersecurity, algorithmic bias, transparency, and ethical decision-making. Organizations must adopt responsible AI practices to maintain consumer trust while ensuring compliance with emerging data protection regulations. Furthermore, AI contributes to sustainable business development by optimizing marketing resources, reducing operational waste, improving demand forecasting, and supporting customer-centric decision-making. This paper examines the influence of AI on marketing analytics and consumer behaviour, explores its practical applications, identifies key challenges, and discusses future opportunities for sustainable business growth in the digital economy.

Keywords: Artificial Intelligence, Marketing Analytics, Consumer Behaviour, Predictive Analytics, Customer Insights.

**EXPLAINABLE AI (XAI): BUILDING TRUST, TRANSPARENCY AND
ACCOUNTABILITY IN BUSINESS AND SOCIETY**

Dr. K. Balaji @ Mathimaran

Assistant Professor of Commerce

Rajiv Gandhi Arts and Science College, Puducherry

Mrs. Rouvier Sabrina Marie

Assistant Professor of Commerce

Rajiv Gandhi Arts and Science College, Puducherry

Mr. M. Kirubagar

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

ABSTRACT

Artificial Intelligence (AI) has become an integral part of modern business and society, influencing decision-making in sectors such as banking, healthcare, education, insurance, ecommerce, and public administration. Although AI offers significant benefits by improving efficiency, accuracy, and productivity, many AI systems operate as "black boxes," making decisions without providing clear explanations. This lack of transparency raises concerns regarding fairness, accountability, trust, and ethical responsibility. Explainable Artificial Intelligence (XAI) has emerged as an effective solution to address these challenges by making AI decisions understandable to humans. Unlike traditional AI systems that provide only predictions or outcomes, XAI explains the reasoning behind its decisions, enabling users to verify, interpret, and trust AI-generated results. As organizations increasingly rely on AI for critical decisions, explainability has become essential for responsible AI adoption. This paper examines the concept of Explainable Artificial Intelligence, its importance, major techniques, practical applications, benefits, challenges, and role in promoting ethical and transparent AI systems. The study also discusses responsible AI frameworks, sustainable development, and real-world case studies to highlight the growing significance of explainability in business and society. The paper concludes that Explainable AI is not only a technological advancement but also an essential requirement for building trustworthy, fair, and accountable AI systems. By combining innovation with transparency, XAI has the potential to strengthen public confidence and support the responsible use of Artificial Intelligence in the future.

Keywords: Artificial Intelligence, Explainable Artificial Intelligence, Ethics, Transparency, Trust, Responsible AI

SMART AGRICULTURE AND AGRI-TECH INNOVATION

Ms. S. Saranya

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

Ms. S. Madhumithra

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

Ms. D. Kavyapriya

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

ABSTRACT

Agriculture is one of the most important sectors that supports food production, economic development, and rural livelihoods. However, farmers today face several challenges such as climate change, unpredictable weather, water scarcity, soil degradation, labour shortages, and increasing production costs. These challenges have encouraged the adoption of Smart Agriculture and Agri-Tech Innovations to improve farming productivity and sustainability. Smart Agriculture integrates advanced technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), drones, sensors, robotics, GPS, cloud computing, and data analytics into agricultural practices. These technologies help farmers monitor crop health, analyse soil conditions, manage irrigation efficiently, detect diseases early, and optimize the use of fertilizers and pesticides. Modern agricultural technologies enable farmers to make accurate decisions based on real-time information rather than traditional assumptions. Precision farming techniques improve crop yield while reducing environmental pollution and resource wastage. Smart irrigation systems help conserve water, while drones and satellite imaging provide better crop monitoring. AI-powered systems also predict weather conditions and identify crop diseases before they become severe. These innovations not only increase farm productivity but also improve food quality and farmers' income.

KEY WORDS: Smart Agriculture, Agri-Tech, Artificial Intelligence, Internet of Things, Precision Farming, Drones, Sensors.

ROLE OF ARTIFICIAL INTELLIGENCE IN SUSTAINABLE DEVELOPMENT GOALS (SDGs)

Mr. C. Chandrakasan

Assistant Professor of Commerce

Rajiv Gandhi Arts and Science College, Puducherry.

Ms. G. Suriya Priya

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

Ms. V. Mohana Priya

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

ABSTRACT

Sustainable development is a concept that aims to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. It focuses on balancing economic growth, environmental protection, and social well-being. In today's rapidly changing world, sustainable development has become essential for ensuring long-term progress and improving the quality of life.

Businesses, governments, and individuals play an important role in achieving sustainable development. Organizations are adopting eco-friendly practices such as reducing waste, conserving natural resources, using renewable energy, and promoting responsible production and consumption. These initiatives help protect the environment while supporting economic development.

Technology and innovation also contribute significantly to sustainable development. Artificial Intelligence (AI), data analytics, and digital technologies help organizations improve resource management, reduce pollution, and make informed decisions for sustainable growth. These advancements support efficient planning and encourage responsible use of resources.

Keywords:

Sustainable Development, Environmental Protection, Social Responsibility, Green Technology, Artificial Intelligence (AI).

**ENTREPRENEURSHIP, STARTUPS AND INNOVATION
MANAGEMENT IN THE DIGITAL ERA**

Mr. S. Lingeshwaran

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

Mr. E. Karthikraj

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

Ms. S. Harini

II B. Com (General)

Rajiv Gandhi Arts and Science College, Puducherry.

ABSTRACT

Entrepreneurship has become one of the strongest engines of economic transformation in India, driven by digital technology, easier access to capital, and a growing culture of risk-taking among young people. This paper examines how entrepreneurship, start-ups and innovation management interact to create sustainable and inclusive growth in the Indian economy. It traces the entrepreneurial process from idea generation to scaling, explains the components of the start-up ecosystem, and studies how innovation management practices such as design thinking, lean methodology, and R&D investment help ventures survive in a competitive market. The paper also looks at government initiatives such as Start-up India, funding mechanisms like venture capital and angel investment, and the role of incubators and accelerators in nurturing early-stage ventures. Using real-world examples from Indian start-ups, the study highlights common challenges such as funding gaps, regulatory hurdles, talent shortages, and market uncertainty, along with the psychological and behavioural traits that separate successful entrepreneurs from the rest. The paper concludes that a supportive ecosystem, combined with structured innovation management and inclusive policy design, is essential for building start-ups that are both profitable and socially beneficial.

KEYWORDS: Entrepreneurship, Start-ups, Innovation Management, Start-up Ecosystem, Sustainable Growth, Inclusive Growth.

**PATTERNS OF ARTIFICIAL INTELLIGENCE TOOL USAGE AND ACADEMIC
PERFORMANCE: A CONCEPTUAL STUDY FROM THE PERSPECTIVE OF COLLEGE
STUDENTS**

Dr. G. Bala Sendhil Kumar¹

Mr.CV.Jeevessh²

Mr.D.Preetish³

¹Head and Professor, Department of Business Studies,

Sri Manakula Vinayagar Engineering College, Puducherry.

^{2,3} Final year B.Com Corporate Secretaryship Department of Business Studies,

School of Arts and Science, Sri Manakula Vinayagar Engineering College, Puducherry.

ABSTRACT

Artificial Intelligence (AI) has rapidly transformed higher education by introducing intelligent tools that support learning, research, writing, problem-solving, and academic decision-making. Applications such as ChatGPT, Google Gemini, Microsoft Copilot, Grammarly, and Perplexity AI have become widely adopted by college students because they provide instant access to information, personalized learning experiences, and academic assistance. While these technologies improve productivity and learning efficiency, concerns have emerged regarding overdependence, academic integrity, reduced critical thinking, and ethical use of AI-generated content.

This conceptual paper explores the relationship between AI tools and academic performance by synthesizing existing literature and proposing a conceptual framework that explains how AI influences students' learning behaviour and educational outcomes. The framework identifies AI tool usage as the primary driver that enhances learning efficiency, research skills, assignment quality, time management, and student engagement, which subsequently contribute to improved academic performance. The paper also highlights the importance of AI literacy, ethical guidelines, and responsible AI adoption in higher education.

The study concludes that AI should be viewed as a learning companion rather than a replacement for independent thinking. Educational institutions should integrate AI responsibly by developing policies, faculty training programmes, and AI literacy initiatives that encourage students to use AI ethically while strengthening creativity, analytical thinking, and problem-solving skills.

Keywords

Artificial Intelligence, Academic Performance, Higher Education, College Students, ChatGPT, Educational Technology, AI Literacy, Digital Learning, Learning Outcomes, Responsible AI.

A CONCEPTUAL STUDY ON IMPACT OF LIFELONG LEARNING ON EMPLOYABILITY

Dr. G. Bala Sendhil Kumar¹

Ms. A. Renee²

Ms. G. Manimozhi³

*¹Head & Professor, Department of Business Studies, Sri Manakula Vinayagar Engineering College,
Puducherry*

*^{2,3}Final year B.B.A Fintech & Digital Banking, Department of Business Studies, Sri Manakula
Vinayagar Engineering College, Puducherry*

ABSTRACT

In the modern employment environment, rapid technological development, changing business practices, and increasing competition have made continuous learning essential for individuals. Lifelong learning refers to the continuous process of acquiring knowledge, skills, competencies, and experiences throughout a person's life. Employability refers to an individual's ability to obtain, maintain, and progress in employment by possessing relevant knowledge, skills, adaptability, and personal capabilities. This conceptual paper examines the relationship between lifelong learning and employability. The study proposes that participation in lifelong learning activities improves employability by developing professional knowledge, technical skills, digital competencies, adaptability, and problem-solving abilities. The paper also presents a conceptual framework and model that explain how lifelong learning can influence employability, with skill development, digital literacy, adaptability, and career competencies acting as important dimensions. The study suggests that individuals who continuously update their knowledge and skills are better prepared to respond to changing labour-market requirements and improve their career opportunities.

Keywords: Lifelong Learning, Employability, Skill Development, Digital Literacy, Career Development, Adaptability

A STUDY ON ARTIFICIAL INTELLIGENCE IN BUSINESS DECISION MAKING AND STRATEGY

Mr. G. Venkatesan¹

Ms. Devadharshini. N²

Ms. Faiza Begam N S³

¹Assistant Professor, Department of Business Studies, Sri Manakula Vinayagar Engineering College, Puducherry

^{2,3}Final year BBA (General), Department of Business Studies, Sri Manakula Vinayagar Engineering College, Puducherry

ABSTRACT

Artificial Intelligence (AI) has emerged as one of the most transformative technologies in the modern business environment, fundamentally changing how organizations make decisions and formulate strategies. The increasing availability of big data, machine learning, predictive analytics, and intelligent automation has enabled businesses to improve operational efficiency, reduce uncertainty, and gain a competitive advantage. AI-driven systems assist managers by analyzing vast amounts of structured and unstructured data, identifying patterns, forecasting future trends, and providing data-driven recommendations for strategic decision-making.

Organizations across industries, including finance, healthcare, retail, manufacturing, and logistics, have integrated AI into decision-making processes to improve customer satisfaction, optimize resource allocation, and enhance organizational performance. Despite its advantages, AI adoption also presents challenges such as data privacy concerns, ethical issues, algorithmic bias, implementation costs, and the need for skilled professionals.

This study examines the role of Artificial Intelligence in business decision-making and strategic management, evaluates its benefits and challenges, and explores its impact on organizational performance. A descriptive research design utilizing primary and secondary data is proposed. Primary data will be collected through structured questionnaires distributed to managers, business professionals, entrepreneurs, and students, while secondary data will be gathered from journals, research articles, books, and industry reports. Statistical tools including percentage, correlation, and regression analyses will analyze the data. The findings are expected to show that AI enhances business decision-making by improving efficiency, accuracy, and strategic planning while emphasizing human judgment for ethical and responsible implementation.

Keywords: Artificial Intelligence, Business Decision-Making, Strategic Management, Machine Learning, Predictive Analytics, Business Intelligence, Organizational Performance.

IMPACT OF AI TRANSPARENCY ON CONSUMER ADOPTION BEHAVIOUR

Mr. G. Venkatesan¹

Mr. S.Naveen chander²

Mr. S. Vasantharaja³

¹Assistant Professor, Department of Business Studies, Sri Manakula Vinayagar Engineering College,
Puducherry

^{2,3} Final year B.B.A. Business Administration, Department of Business Studies,
Sri Manakula Vinayagar Engineering College, Puducherry

ABSTRACT

Artificial Intelligence (AI) has emerged as a powerful technology in modern marketing analytics, enabling businesses to understand consumer behaviour, predict customer preferences, and deliver personalized marketing experiences. AI-based systems are widely used in recommendation engines, targeted advertising, and customer relationship management to improve decision-making and customer engagement. However, the increasing dependence on AI has created concerns regarding the transparency of algorithm-based decisions. Many AI systems function as “black-box” models, where consumers have limited knowledge about how their data is collected, processed, and used to generate recommendations. This lack of algorithm transparency may negatively influence consumer confidence, trust, and willingness to adopt AI-driven marketing services.

This study aims to examine the impact of algorithm transparency on consumer confidence and adoption of AI-based marketing analytics. The research focuses on understanding whether providing clear explanations about AI decisions can improve consumer trust and acceptance. A descriptive research approach is adopted, with data collected through a structured questionnaire from consumers. The study highlights the importance of explainable and transparent AI practices in building stronger consumer relationships. The findings are expected to help marketers develop ethical AI strategies that improve customer trust, enhance acceptance, and support the successful implementation of AI-based marketing solutions.

Keywords:

Artificial Intelligence, Marketing Analytics, Algorithm Transparency, Consumer Confidence, Consumer Trust, AI Adoption.

**A DESCRIPTIVE STUDY ON SUSTAINABLE CONSUMPTION AND PRODUCTION:
DRIVING SDG 12 THROUGH CIRCULAR ECONOMY INTEGRATION**

Dr. S. Sivasacty¹

B. Shabari Sairaam²

B. Farhathullah³

¹Associate professor, Department of Business Studies,

Sri Manakula Vinayagar Engineering College, Puducherry.

^{2,3}Final year B.Com. Computer Applications, Department of Business Studies,

Sri Manakula Vinayagar Engineering College, Puducherry.

ABSTRACT

Sustainable Consumption and Production (SCP) has become one of the most pressing priorities for economies seeking to align growth with the United Nations' 2030 Agenda for Sustainable Development, particularly Sustainable Development Goal 12. While environmental targets and production-side regulation attract considerable attention, the consumption side of the equation remains comparatively under-addressed, especially the persistent gap between consumer intent and consumer behaviour. This paper proposes a descriptive framework for understanding how policy enforcement, circular economy adoption, and consumer behaviour interact to determine SCP outcomes at the national level, using India as the primary reference context. Drawing on secondary data from NITI Aayog, United Nations progress reports, and existing literature on circular economy models, the paper identifies the structural and behavioural barriers slowing SCP adoption and evaluates where consistent policy enforcement has produced measurable results. Rather than relying on primary fieldwork, the study synthesises government reports, international assessments, and peer-reviewed literature into a single explanatory framework built around four interacting layers: policy enforcement, circular production, consumer information, and monitoring and reporting.

Keywords: *Sustainable Consumption and Production, SDG 12, Circular Economy, Extended Producer Responsibility, Attitude-Behaviour Gap, Waste Management, Sustainable Development*

FACTORS INFLUENCING FAST FOOD CONSUMPTION AND HEALTH AWARENESS AMONG COLLEGE STUDENTS: A CONCEPTUAL STUDY

Dr. S. Sivasacty¹

Ms. S. Akshaini²

Ms. S. Sujitha³

¹Associate Professor, Department of Business Studies, Sri Manakula Vinayagar Engineering College,
Puducherry

^{2,3}Final year B.B.A. Fintech and Digital Banking, Department of Business Studies, Sri Manakula
Vinayagar Engineering College, Puducherry

ABSTRACT

Fast food consumption among college students has emerged as a significant public health concern worldwide, driven by convenience, taste, peer influence, and campus environments that make quick-service food the default option. While a growing body of empirical research has examined isolated predictors such as demographics, income, and lifestyle, few studies have integrated these factors into a single conceptual model that also accounts for the role of health awareness. This paper adopts a conceptual research approach, synthesizing findings from correlational and cross-sectional studies conducted in Indonesia, Malaysia, India, South Korea, and Sri Lanka to propose an integrated framework explaining fast food consumption behavior among college students. The framework positions demographic factors, peer influence, environmental accessibility, and lifestyle patterns as antecedents of consumption behavior, with health awareness functioning as a potential moderating variable that weakens or strengthens these relationships, and body mass index (BMI) or general well-being as the resulting outcome. Six propositions are advanced to guide future empirical testing. The paper concludes that knowledge alone is insufficient to alter consumption behavior unless supported by environmental and social conditions conducive to healthier choices. The proposed model offers a foundation for future quantitative validation and provides useful implications for university administrators, health educators, and policymakers seeking to design targeted nutrition interventions for the college student population.

Keywords: *fast food consumption; health awareness; college students; peer influence; lifestyle; conceptual framework; nutrition behavior.*

EFFECTIVENESS OF AI IN DIGITAL MARKETING – A STUDY WITH REFERENCE TO COLLEGE STUDENTS

Dr. V. Anitha¹

Ms. Sree Raagavi . R²

Ms. Megha B Nair³

¹Assistant Professor, Department of Business Studies, Sri Manakula Vinayagar Engineering
College, Puducherry

^{2,3}Final year BBA (General), Department of Business Studies, Sri Manakula Vinayagar Engineering
College, Puducherry

ABSTRACT

Artificial Intelligence (AI) has become one of the most influential technologies transforming the marketing landscape by providing personalized recommendations, predictive analytics, virtual assistants, and intelligent shopping experiences. College students, being digitally connected and technologically aware, are among the most active users of AI-enabled platforms for online shopping. AI-powered applications such as recommendation systems, chatbots, voice assistants, and targeted advertisements significantly influence their purchasing decisions by enhancing convenience, personalization, and customer satisfaction.

This study aims to examine the impact of Artificial Intelligence on the buying behaviour of college students. It identifies the factors influencing AI-driven purchase decisions, evaluates students' awareness and acceptance of AI technologies, and analyses how AI affects their trust, satisfaction, and purchasing intentions. The study adopts a descriptive research design with data collected from 150 college students through a structured questionnaire using simple random sampling. Statistical tools such as percentage analysis, correlation, and regression analysis are used to interpret the collected data.

The findings indicate that AI significantly influences consumer buying behaviour by improving shopping convenience, offering personalized recommendations, reducing search time, and increasing customer engagement. However, concerns regarding data privacy, security, and excessive dependence on AI continue to influence consumer perceptions. The study concludes that AI has become an essential component of digital marketing strategies targeting college students and recommends that businesses focus on transparent AI practices to enhance consumer trust and long-term customer relationships.

Keywords: *Artificial Intelligence, Consumer Buying Behaviour, College Students, Digital Marketing, Personalization, Online Shopping, Chatbots, Recommendation Systems.*

**A DESCRIPTIVE STUDY ON ARTIFICIAL INTELLIGENCE: EXPLORING THE ROLE
OF AI IN BUSINESS DECISION MAKING AND STRATEGIC DEVELOPMENT**

Dr. Anitha. V¹

Mr. Abinеш. M²

Mr. Dinesh. E²

*¹Assistant professor, Department of Business Studies. Sri Manakula Vinayagar Engineering College,
Puducherry.*

*²Final year B.Com (Computer Applications), Department of Business Studies, School of Arts and
Science, Sri Manakula Vinayagar Engineering College, Puducherry*

ABSTRACT

Artificial Intelligence (AI) has become a transformative technology that is reshaping the modern business environment by improving decision-making processes and strategic management practices. In today's competitive market, organizations require faster and more accurate decisions to achieve sustainable growth. AI enables businesses to analyze large volumes of data, identify patterns, predict future trends, and generate valuable insights that support effective decision-making.

This study focuses on exploring the role of Artificial Intelligence in business decision-making and strategy development. AI technologies such as Machine Learning, Predictive Analytics, Natural Language Processing, and Intelligent Automation are increasingly used across various business functions, including marketing, finance, human resource management, supply chain management, and customer relationship management.

The study examines the applications, benefits, and challenges of implementing AI in business operations. It highlights how AI improves decision accuracy, operational efficiency, customer experience, cost management, and competitive advantage.

The integration of Artificial Intelligence provides organizations with the ability to adapt to changing market conditions and develop innovative strategies. However, challenges such as data privacy, ethical concerns, implementation costs, and the need for skilled professionals must be addressed for successful AI adoption. This study concludes that AI acts as a strategic tool that supports business growth, innovation, and long-term organizational success.

Keywords: *Artificial Intelligence, Business Decision Making, Strategic Management, Machine Learning, Predictive Analytics, Business Strategy*

**TOURISM, HOSPITALITY AND SERVICE INNOVATION: THE IMPACT OF
ARTIFICIAL INTELLIGENCE ON CUSTOMER EXPERIENCE IN THE HOSPITALITY
INDUSTRY**

Mr. Sukumar. C¹

Mr. Praveen. V²

Mr. Vimalraj. L³

*¹Assistant professor, Department of Business Studies, Sri Manakula Vinayagar Engineering College,
Puducherry.*

*^{2,3}Final year B.Com (Computer Applications), Department of Business Studies,
Sri Manakula Vinayagar Engineering College, Puducherry.*

ABSTRACT

The hospitality industry is rapidly evolving with the adoption of Artificial Intelligence (AI), which is transforming the way hotels, restaurants, resorts, and travel businesses serve their customers. AI-powered technologies such as chatbots, virtual assistants, facial recognition, recommendation systems, predictive analytics, robotic services, and contactless check-in have significantly improved customer interactions and service delivery. These innovations help organizations provide faster, more personalized, and efficient services while enhancing overall guest satisfaction.

This study explores the impact of Artificial Intelligence on customer experience in the hospitality industry through a qualitative review of existing literature, industry reports, and real-world case studies. It examines how AI supports personalized customer service, reduces response time, improves operational efficiency, and strengthens customer loyalty. At the same time, the study highlights key challenges associated with AI adoption, including data privacy and security concerns, high implementation costs, employee adaptation, and the need to preserve human interaction in hospitality services.

The study concludes that AI will continue to play a vital role in shaping the future of the hospitality industry by creating smarter, more customer-focused, and efficient service environments. Organizations that successfully combine AI with personalized human service are more likely to achieve long-term customer satisfaction, operational excellence, and sustainable competitive advantage.

Keywords: *Artificial Intelligence, Hospitality Industry, Customer Experience, Customer Satisfaction, Service Innovation, Smart Hotels, Digital Transformation, Chatbots, Personalized Services.*

A STUDY ON GENERATIVE AI AND ENTREPRENEURIAL INTENTION AMONG COLLEGE STUDENTS: THE ROLE OF ENTREPRENEURIAL SELF-EFFICACY

Mr. C. Sukumar¹ Ms. S. Devi Sri² Ms. R. K. Shanthini³

¹*Assistant Professor, Department of Business Studies, Sri Manakula Vinayagar Engineering College,
Puducherry*

^{2,3}*Final year B.Com. Computer Applications, Department of Business Studies, Sri Manakula
Vinayagar Engineering College, Puducherry*

ABSTRACT

The rapid advancement of Generative Artificial Intelligence (Generative AI) has transformed the way individuals learn, innovate, and solve problems, creating new opportunities for entrepreneurship. AI-powered tools such as ChatGPT, Gemini, and Microsoft Copilot enable users to generate business ideas, conduct market research, prepare business plans, create marketing content, and improve decision-making with greater efficiency. As a result, Generative AI is becoming an important technological resource for college students who aspire to become entrepreneurs. However, despite its growing adoption, it remains unclear whether the use of Generative AI directly encourages entrepreneurial intention or whether this relationship is influenced by students' confidence in their entrepreneurial abilities. This study aims to examine the relationship between Generative AI usage and entrepreneurial intention among college students, with entrepreneurial self-efficacy acting as a mediating variable. This study Adopt a Conceptual research design based on a systematic review and synthesis of existing scholarly Literature. The selected studies were critically analysed to identify theoretical relationships, recurring themes, and research gaps concerning Generative AI, entrepreneurial self-efficacy, and entrepreneurial intention. The findings are expected to contribute to the growing literature on AI-enabled entrepreneurship by providing insights into how Generative AI can foster entrepreneurial mindsets among students. The study also offers practical implications for higher education institutions and policymakers seeking to integrate AI technologies into entrepreneurship education and promote innovation-driven entrepreneurial ecosystems.

Keywords: *Generative AI, Entrepreneurial Intention, Entrepreneurial Self-Efficacy, College Students, Entrepreneurship Education.*

GENERATIVE AI IN HEALTHCARE AND MEDICAL DIAGNOSTICS: APPLICATIONS AND CHALLENGES

Mr. A. Jayachandiran¹ Ms. P. Dhivyashri² Ms. M. Monisha³

¹ Assistant Professor, Department of Business Studies,

Sri Manakula Vinayagar Engineering College, Puducherry

^{2,3} Final year B.Com. Computer Applications, Department of Business Studies,

Sri Manakula Vinayagar Engineering College, Puducherry

ABSTRACT

Artificial Intelligence (AI) is playing an important role in modern healthcare by helping doctors diagnose diseases more quickly and accurately. It analyzes medical data such as X-rays, CT scans, MRI scans, and patient records to detect diseases at an early stage. AI also supports better treatment planning and improves patient care by reducing human errors and saving time. This study reviews the applications, benefits, and challenges of AI in healthcare using information collected from research papers and academic journals. The findings show that AI has the potential to improve diagnostic accuracy and healthcare services. However, challenges such as data privacy, ethical issues, algorithm bias, and the need for high-quality data must be addressed. Overall, AI should support healthcare professionals rather than replace them, and with responsible implementation, it can improve the quality and efficiency of healthcare in the future.

Keywords: Generative AI, medical diagnostics, healthcare technology, clinical decision support, artificial intelligence adoption.

CIRCULAR ECONOMY FOR SUSTAINABLE WASTE MANAGEMENT AND RESOURCE EFFICIENCY: CHALLENGES AND OPPORTUNITIES

Mr. A. Jayachandiran¹

Ms. K. Divya² Ms. G S. Bavithra Lakshimi³

¹*Assistant Professor, Department of Business Studies, Sri Manakula Vinayagar Engineering College,
Puducherry*

^{2,3}*Final year B.Com Computer Applications, Department of Business Studies,
Sri Manakula Vinayagar Engineering College, Puducherry.*

ABSTRACT

The increasing generation of waste and the rapid consumption of natural resources have become major environmental concerns across the world. Effective waste management and efficient resource utilization are essential for achieving sustainable development. The concept of the circular economy promotes the reduction, reuse, recycling, and recovery of materials, thereby minimizing waste and maximizing resource efficiency. This study examines the role of the circular economy in improving waste management and enhancing resource efficiency. It identifies the major challenges that limit the adoption of circular economy practices and explores the opportunities for creating a more sustainable system. The study also highlights the importance of responsible resource use, recycling practices, and sustainable waste management in reducing environmental impacts. The findings of this study are expected to provide valuable insights for policymakers, industries, educational institutions, and the public in promoting sustainable waste management practices. The study concludes that adopting circular economy principles can significantly contribute to environmental sustainability, resource conservation, and long-term economic development.

Keywords: *Sustainable waste management, resource efficacy, Circular Economy, environmental sustainability, economic development, environmental sustainability.*

A Conceptual Framework of HR Analytics and Talent Management

Mr. S. Ezhil Vasanthan¹

G. Ravindar Singh²

M. Manish³

¹ Assistant Professor, Department of Business Studies, School of Arts and Science,
Sri Manakula Vinayagar Engineering college, Puducherry.

^{2&3} Final year B.Com. Computer Applications, Department of Business Studies, School of Arts and
Science,

Sri Manakula Vinayagar Engineering college, Puducherry.

Abstract

Human Resource (HR) Analytics has emerged as a strategic tool that enables organizations to make data-driven decisions across various human resource functions. Talent management, which encompasses talent acquisition, employee development, performance management, succession planning, and retention, plays a vital role in achieving organizational effectiveness. The integration of HR analytics with talent management has transformed conventional HR practices into evidence-based processes that enhance workforce productivity and support long-term business objectives.

The present study examines the significance of HR analytics in strengthening talent management practices within organizations. It explores how the systematic analysis of employee data assists HR professionals in identifying workforce trends, forecasting talent requirements, improving recruitment and selection, evaluating employee performance, designing effective training programmes, and developing succession plans. The study also investigates the contribution of HR analytics to employee engagement, retention, and overall organizational performance. Furthermore, it highlights the opportunities offered by analytical tools in improving the quality of HR decisions while reducing bias and enhancing operational efficiency.

The study identifies several challenges associated with the implementation of HR analytics, including data privacy concerns, inadequate technological infrastructure, poor data quality, and the shortage of analytical competencies among HR professionals. Despite these limitations, the findings indicate that organizations adopting HR analytics achieve more effective talent management outcomes, improved workforce planning, and greater organizational competitiveness. The study concludes that HR analytics has become an indispensable component of modern talent management by facilitating strategic, objective, and evidence-based human resource decisions that contribute to sustainable organizational growth and long-term success.

Keywords: *Human Resource Analytics (HR Analytics), Talent Management, Recruitment and Selection, Employee Performance, Workforce Planning, Employee Engagement, Employee Retention, Succession Planning, Organizational Performance.*

A STUDY OF INNOVATION ECOSYSTEM AND KNOWLEDGE TRANSFER

Mr. S. Ezhil Vasanthan¹

Ms. D. Sivapriya²

Ms .L AyishaBanu³

¹Assistant professor, Department of Business Studies, Sri Manakula Vinayagar Engineering College, Puducherry.

²Final year B.Com (Computer Applications), Department of Business Studies, School of Arts and Science, Sri Manakula Vinayagar Engineering College, Puducherry

ABSTRACT

The Innovation has become an essential factor for the growth and competitiveness of organizations. In today's business environment, innovation is achieved through collaboration among universities, industries, and government institutions rather than through the efforts of a single organization. This collaboration forms an innovation ecosystem that supports the exchange of knowledge, ideas, technology, and research outcomes. Knowledge transfer plays a significant role in this ecosystem by helping organizations apply research findings to practical innovations and improve their overall performance.

This study focuses on understanding the role of the innovation ecosystem in promoting knowledge transfer. It examines the challenges caused by weak collaboration among universities, industries, and government institutions and explores how stronger partnerships can improve the flow of knowledge and support innovation. The study also highlights the importance of effective communication, coordination, and stakeholder participation in building a successful innovation ecosystem.

The research follows a conceptual methodology based on secondary data collected from research articles, journals, books, and other academic sources. The study is supported by the Triple Helix Model, which explains the relationship between universities, industries, and government in encouraging innovation and knowledge sharing. The findings suggest that improving collaboration, encouraging joint research activities, and strengthening knowledge-sharing practices can reduce knowledge transfer barriers and contribute to sustainable innovation and organizational development.

Keywords: *Innovation Ecosystem, Knowledge Transfer, University–Industry–Government Collaboration, Triple Helix Model, Innovation, Organizational Performance.*

ETHICAL IMPLICATIONS OF ARTIFICIAL INTELLIGENCE IN BUSINESS: A CONCEPTUAL STUDY

Ms.C.Mani Arasi¹

Ms. M.Bharathi²

Ms. V. Divyadharshiny³

¹Assistant Professor, Department of Business Studies,
Sri Manakula Vinayagar Engineering College, Puducherry

^{2,3}Final year B.B.A. Fintech and Digital Banking, Department of Business Studies,
Sri Manakula Vinayagar Engineering College, Puducherry

ABSTRACT

Artificial Intelligence (AI) has moved from being an experimental technology to a core driver of business decision-making, risk management, and organisational strategy. As AI systems take on a growing share of tasks once reserved for human judgement, they also raise a distinct set of ethical questions that organisations cannot afford to ignore. This paper is a conceptual study that examines the ethical implications of AI adoption in business, drawing on existing literature covering AI in decision-making, fraud detection, corporate risk management, and organisational ethics. Rather than collecting primary data, this study synthesises prior empirical and theoretical work to build a conceptual framework linking AI adoption, ethical concerns (privacy, bias, transparency, accountability, and job displacement), organisational and demographic factors, and business outcomes such as trust, decision quality, and organisational performance. The paper proposes a conceptual model and a set of propositions describing how these constructs are likely to relate to one another, and discusses the practical and theoretical implications for managers, policymakers, and researchers. The study concludes that ethical AI adoption is not a one-time compliance exercise but an ongoing, context-sensitive process that must be actively managed alongside the technical rollout of AI systems.

Keywords: Artificial Intelligence, Business Ethics, Algorithmic Bias, Data Privacy, Transparency, Accountability, Organisational Performance

**A STUDY ON EXPLORING THE ROLE OF ARTIFICIAL INTELLIGENCE IN BUSINESS
DECISION MAKING AND STRATEGY PLANNING**

Ms. Vaishnavi. K¹

Ms. Monisha. S²

Ms. Dharani Sri. E²

*¹Assistant professor, Department of Business Studies. Sri Manakula Vinayagar Engineering College,
Puducherry.*

*²Final year B.Com. Computer Applications, Department of Business Studies,
Sri Manakula Vinayagar Engineering College, Puducherry*

ABSTRACT

Artificial Intelligence (AI) has become an important technology that supports business decision-making and strategy planning in modern organizations. AI technologies such as machine learning, predictive analytics and generative AI help businesses analyze data, improve decision accuracy, identify market trends and develop effective strategies. This conceptual research paper examines the role of AI in enhancing business decision-making and strategic planning while discussing its benefits and challenges. The study also proposes a conceptual framework linking AI adoption, business decision-making, strategy planning and organizational performance. The paper provides theoretical insights for researchers and business practitioners and suggests directions for future research.

Keywords

Artificial Intelligence; Business Decision-Making; Strategy Planning; Machine Learning; Predictive Analytics; Business Intelligence; Digital Transformation; Strategic Management; Organizational Performance.

**RESPONSIBLE AI ADOPTION FOR SUSTAINABLE PUBLIC GOVERNANCE:
CHALLENGES IN POLICY IMPLEMENTATION AND FUTURE RESEARCH
DIRECTIONS**

Mr. Krishna Kumar. C¹

Ms. Abinaya. C²

Ms. Ramya. C³

*¹Assistant professor, Department of Business Studies,
Sri Manakula Vinayagar engineering college, Puducherry.*

*²Final year B.Com. Computer Applications, ³Second year B.Com. Corporate Secretaryship,
Department of Business Studies, Sri Manakula Vinayagar Engineering College, Puducherry*

ABSTRACT

Artificial Intelligence (AI) has become an important part of public administration by improving decision-making, service delivery, and governance efficiency. Governments across the world, including India, have introduced AI-based initiatives and policy frameworks to promote ethical and responsible use of AI in the public sector. At the same time, sustainable public governance has gained increasing attention in achieving the Sustainable Development Goals (SDGs). Although several Responsible AI frameworks and sustainability-oriented policies have been developed, their implementation in public governance continues to face practical challenges. Existing studies mainly discuss AI governance, ethical principles, and sustainability independently, while limited attention has been given to the implementation of Responsible AI in achieving sustainable public governance.

This paper adopts a conceptual review approach by examining existing literature and policy documents to understand the challenges associated with Responsible AI implementation in the public sector. The study identifies institutional readiness, governance capacity, transparency, accountability, data governance, and policy implementation as key factors influencing successful AI adoption. Based on the findings, the paper recommends a phased implementation approach, AI readiness assessment before deployment, and continuous monitoring to strengthen Responsible AI adoption in government institutions. The study highlights the need to shift the focus from policy formulation to effective implementation, thereby contributing to the development of sustainable, transparent, and citizen-centric public governance.

Keywords: *Artificial Intelligence, Responsible AI, Sustainable Public Governance, Policy Implementation, Public Administration.*

A study on Machine learning for financial forecasting in banking

1st Author : D.Barathi

2nd Author : D.Dharshni

Department of commerce, Christ Arts and Science College, Puducherry

ABSTRACT

Machine learning (ML) is changing the financial forecasting domain in the banking sector by enhancing the forecast accuracy and decision-making process. This research focuses on the application of machine learning (ML) models for prediction on loan performance, credit risk, customers' behavior and finance trends. From the literature reviewed it is concluded that the standard ML models are more accurate and efficient in forecasting as compared to the conventional approaches.

KEYWORDS:

Machine Learning, Financial Forecasting, Banking, Artificial Intelligence (AI), Predictive Analytics, Credit Risk Analysis, Loan Default Prediction, Time Series Forecasting, Deep Learning,.

“A Study on Factors Influencing Entrepreneurial Startup and Business Opportunities”

MOHANA PRIYA.P, CECILY.A

DEPARTMENT OF COMMERCE, CHRIST ARTS AND SCIENCE COLLEGE

ABSTRACT

Startup success is driven by a multitude of factors and identifying the critical factors that lead to long-term sustainability and high performance is of importance. The purpose of this research paper is to investigate the critical factors influencing the success of startups, by utilizing machine learning techniques to analyse more than 4000 cases of startups. Decision Tree, Random Forest and Gradient Boosting models are used to investigate the impact of startup parameters for predicting the outcome of startups. In this study, some variables such as industry sector, location, age of the start up, previous entrepreneurial experience and educational level of founders have been taken into consideration and investigated regarding their prediction ability for the success of the startup. The analysis will highlight the most influential factors affecting startup success and the effectiveness of machine learning algorithms in accurately predicting the performance of the startup. Therefore, this research contributes to the literature of entrepreneurial success, and provides a theoretical, methodological, and practical application based on the data of the 4000 startup cases. This will enable investors, policymakers, entrepreneurs and other relevant stakeholders to access data-driven information and best practices.

Keywords: Entrepreneurial Ecosystem, Venture Creation, Opportunity Recognition, Startup Dynamics, Socio-Economic Determinants, India.

Artificial Intelligence and Good Governance: Exploring Opportunities and Challenges for Sustainable Public Administration in Bangladesh

Prof. Mohammad Shah Alam Chowdhury¹, Ms. Sabina Yasmin Surjamokhey², Dr. Mohammad Mehedi Hasan³

¹Professor, Department of English, Dhaka International University, Dhaka, Bangladesh.

²Lecturer, Department of Political Science, Dhaka International University, Dhaka, Bangladesh.

³Assistant Professor, Department of Political Science, Dhaka International University, Dhaka, Bangladesh.

E-mail: shahalam.eng@diu.ac¹, sabinayasmin@diu.ac², mehedihasan.polit@diu.ac³

Abstract: Artificial Intelligence (AI) has become a game-changing technology affecting the governance system, administration and provision of public service globally. AI technologies have the potential to enhance transparency, efficiency, accountability, citizen engagement, and evidence-based decision-making in public administration that is relevant to the context of Bangladesh. In the context of Digital Bangladesh and Smart Bangladesh, the implementation of AI technologies in governance is gaining significance as Bangladesh moves towards digitalization. The relevance of AI technologies in governance has grown as Bangladesh strides towards digitalization, including Digital Bangladesh and Smart Bangladesh initiatives. AI adoption, however, brings forth some important challenges, such as ethical governance, data privacy, algorithm bias, institutional capacity, digital inequality, cyber security and regulatory preparedness. The purpose of this study is to understand the contribution of Artificial Intelligence towards good governance and sustainable public administration in Bangladesh. The study follows a qualitative research methodology, leveraging secondary data sources such as academic research, policy documents, government reports, international publications, and existing research on AI governance and digital public administration. The results come to the conclusion that AI can contribute to enhancing governance by providing automated public services, predictive policy analysis, mechanisms to mitigate corruption, and increased administrative responsiveness. However, for AI to be fully integrated there needs to be a robust policy framework, development of human resources, ethical principles, and a supportive digital infrastructure that ensures inclusivity. To conclude, the potential role of the application of AI technologies in fostering transparent, accountable and sustainable governance in Bangladesh has been suggested in the study, responsibly and human-centred application.

Keywords: Artificial Intelligence, Good Governance, Public Administration, Digital Governance, Smart Bangladesh, Sustainable Development

**Transforming Employee Experience Through Reward Systems: A Review of Loyalty,
Workplace Behavior and Sustainable Performance in Private Higher Education
Institutions of Bangladesh**

Mr. Md. Azmir Hossain¹, Dr. Hemant Kumar Watts²

¹Ph.D. Research Scholar, Department of Management, Faculty of Management and
Commerce, Guru Kashi University, Talwandi Sabo, Bathinda, Punjab, India.

²Assistant Professor, Department of Management, Faculty of Management and Commerce,
Guru Kashi University, Talwandi Sabo, Bathinda, Punjab, India.

E-mail: azmirdu@gmail.com¹, hemantwatts171737@gku.ac.in²

Abstract: The present review paper has analyzed and examined the linkage of human resource reward system, loyalty of employee and behavior of employee in private Higher Education Institutions (HEIs) in Bangladesh. The study is focused on the role of financial and non-financial rewards on employee motivation, institutional attachment, decision-making and performance in line with the theme of the conference: Integrating Business Knowledge, Innovation and Sustainable Organizational Development. Based on theories of motivation, organization justice, social exchange and organizational-commitment, the paper suggests that good reward systems must encompass more than money, including acknowledgment, job development, freedom and openness to assessment. This study uses secondary literature analysis to identify employee loyalty as an important link between the reward system and the responsible performance of employees in the context of institutions in the process of development.

Keywords: Human Resource Reward Systems; Employee Loyalty; Workplace Behavior; Higher Education Institutions; Sustainable Organizational Development.

‘Smart Governance in the AI Era: Integrating Technology, Policy, and Sustainable Development Goals (SDGs)’

Dr. Mohammad Mehedi Hasan¹, Ms. Sabina Yasmin Surjamokhey²

¹Assistant Professor, Department of Political Science, Dhaka International University, Dhaka, Bangladesh.

²Lecturer, Department of Political Science, Dhaka International University, Dhaka, Bangladesh.

E-mail: mehedihasan.polit@diu.ac¹, sabinayasmin@diu.ac²

Abstract Over the last few years, the paradigm of transformational governance, public administration and sustainable development has radically changed by dint of the swift vitality of Artificial Intelligence (AI). Smart governance is a new administration paradigm that combines emerging technologies with evidence-based policymaking and citizen participation to bring about a transparent, efficient, inclusive and sustainable administration. Governments are increasingly turning to the intelligent use of technologies like machine learning, big data analytics, automated decision support and prediction for solving complex societal problems and achieving sustainable target-setting goals, the Sustainable Development Goals (SDGs). The aim of this study is to examine the role of Artificial Intelligence and smart governance in the innovation of public policies and the sustainable development. The research aims to follow a qualitative approach, using a secondary data analysis technique, by conducting an analysis of scholarly articles, books, international reports and policy documents. The results show that AI-based smart governance can help enhance efficiency in administration, promote transparency, assist scientific decision-making, boost the delivery of public services, and help achieve SDG's like fight poverty, care for climate, education and health, in addition to smart cities. However, the introduction of AI comes with significant governance issues to consider, such as ethical implications, algorithmic biases, concerns about data privacy, exposure to cyber security risks, digital inequality, and policy and regulatory restrictions. It is concluded that the sustainable development in the digital era, relies on a responsible and inclusive governance of AI, effective policies and institutional capacity.

Keywords: Artificial Intelligence, Smart Governance, Public Administration, Digital Transformation, Public Policy, Sustainable Development Goals

Ambulance Dispatch, Hospital Bed Forecasting, and EMS Coordination in India: A Survey of Techniques and Open Challenges

**Mr. Sathish M.¹, Mr. Danushkumar K.², Mr. Vigneshwaran V.³, Ms. Mahalakshmi A.⁴,
Mrs. V. Saranya⁵**

¹Department of Computer Science and Engineering, Sri Venkateshwaraa College of Engineering and Technology (SVCET), Puducherry, India.

²Department of Computer Science and Engineering, Sri Venkateshwaraa College of Engineering and Technology (SVCET), Puducherry, India.

³Department of Computer Science and Engineering, Sri Venkateshwaraa College of Engineering and Technology (SVCET), Puducherry, India.

⁴Department of Computer Science and Engineering, Sri Venkateshwaraa College of Engineering and Technology (SVCET), Puducherry, India.

⁵Assistant Professor, Department of Computer Science and Engineering, Sri Venkateshwaraa College of Engineering and Technology (SVCET), Puducherry, India.

E-mail: sathish23td0718@svcet.ac.in¹, danushkumar23td0663@svcet.ac.in²,
vigneshwaran23td0730@svcet.ac.in³, mahalakshmi23td0693@svcet.ac.in⁴,
saranya28@svcet.ac.in⁵

Abstract— Emergency medical services (EMS) research has evolved significantly over the last decade, giving rise to several distinct yet complementary research areas, including operations research, reinforcement learning, machine learning, geographic information systems (GIS), and region-specific studies focused on healthcare delivery challenges. This paper presents a comprehensive survey of these research directions by examining classical location-allocation models and their heuristic improvements for ambulance deployment, reinforcement-learning techniques for dynamic ambulance dispatch and redeployment, machine-learning models for short-term hospital and emergency department bed-occupancy forecasting, and GIS-based approaches for real-time situational awareness and emergency response planning. The survey also reviews studies that specifically address EMS challenges in India, including delayed response times, lack of interoperability among healthcare systems, inadequate infrastructure, and limited emergency service accessibility in rural and remote regions. The surveyed techniques are systematically compared based on their data requirements, adaptability, computational complexity, scalability, implementation challenges, and reported performance improvements. Furthermore, the paper identifies the strengths and limitations of each approach and maps operational EMS requirements to the most appropriate technology categories. Rather than proposing a new algorithm or implementation framework, this work serves as a consolidated reference that synthesizes existing knowledge and provides a strong foundation for future research on AI-driven EMS coordination platforms, enabling researchers and practitioners to justify design decisions through a well-structured review of the current state of the art.

Keywords: emergency medical services, ambulance dispatch, reinforcement learning, hospital bed occupancy forecasting, GIS coordination, rural connectivity,

Artificial Intelligence and Environmental Humanities: Re-reading Climate Vulnerability in Amitav Ghosh's *The Hungry Tide*

Ms. Mili Rahman¹, Dr. R. Bakayaraj²

¹Associate Professor, Department of English, Dhaka International University, Dhaka,
Bangladesh.

²Former Associate Professor, Department of English, Guru Kashi University, Talwandi Sabo,
Bathinda, Punjab, India.

E-mail: mili.eng@diu.ac

Abstract With the acceleration of the climate crisis, the need for interdisciplinary solutions involving technological innovation and humanistic research to tackle environmental issues has grown. Predictive modelling, disaster risk assessment, biodiversity monitoring, and environmental decision-making are just a few sectors in which AI is making a difference in climate governance. While AI based methods may focus on data-driven metrics, they tend to overlook the reality of climate vulnerability from lived experiences, cultural memory, ethical considerations, and indigenous ecological knowledge. This paper will explore Amitav Ghosh's *The Hungry Tide* as a literary narrative that can be used to complement AI for climate governance, by highlighting the social and environmental intricacies of the Sundarbans. Using a qualitative approach with close reading of the novel and ecocritical analysis, the study examines the novel's depictions of ecological precarity, multispecies cohabitation, indigenous environmental knowledge and human–nonhuman entanglements in combination with contemporary scholarship on AI and climate adaptation. It contends that AI has the ability to predict and control environmental dangers, but *The Hungry Tide* brings to light the ethical, cultural and affective aspects of climate change that are not quantifiable by algorithms. The paper combines technological and literary approaches to offer an interdisciplinary perspective in which AI and the Environmental Humanities are complementary ways of understanding and responding to climate vulnerability. The study is part of a new debate on sustainable futures that shows that sustainable climate governance needs not only technological intelligence, but also ecological imagination, ethical reflection, and culturally based knowledge.

Keywords: Artificial Intelligence , Environmental Humanities, Climate Vulnerability , *The Hungry Tide* , Indigenous Ecological Knowledge

BUILDING A SUSTAINABLE INNOVATION ECOSYSTEM THROUGH DIGITAL TRANSFORMATION: AN EMPIRICAL INVESTIGATION

Dr. M. Prince Rani¹, Ms. R. Subha², Ms. M. Sowmiya³

¹Assistant Professor, Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

²M.Com., Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

³M.Com., Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

E-mail: mjjprince2016@gmail.com¹, subharajendran01@gmail.com²

Abstract Digital transformation has emerged as a key enabler of sustainable innovation ecosystems by integrating advanced technologies, fostering collaboration, and enhancing organizational capabilities. This study aims to empirically investigate the role of digital transformation in building a sustainable innovation ecosystem and its impact on organizational performance. The research examines key dimensions such as digital technology adoption, innovation capability, organizational agility, knowledge sharing, stakeholder collaboration, and sustainability practices. Primary data are collected through a structured questionnaire from selected organizations, while secondary data are gathered from journals, reports, and industry publications. The collected data are analyzed using appropriate statistical techniques to identify the relationships among the study variables. The findings are expected to reveal that digital transformation significantly enhances innovation capacity, operational efficiency, and collaborative networks, thereby contributing to long-term sustainability and competitive advantage. The study provides valuable insights for business leaders, policymakers, and researchers in formulating effective digital transformation strategies that promote resilient, inclusive, and sustainable innovation ecosystems in the rapidly evolving digital economy.

Keywords: Digital Transformation, Innovation Ecosystem, Sustainability, Organizational Innovation, Digital Technologies, Sustainable Performance, Stakeholder Collaboration.

IMPACT OF GREEN INNOVATION AND DIGITAL TRANSFORMATION ON SUSTAINABLE DEVELOPMENT GOALS: AN EMPIRICAL INVESTIGATION

Dr. M. Prince Rani¹, Ms. V. Sumithra², Ms. U. B. Sadurika³

¹Assistant Professor, Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

²M.Com., Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

³III B.Com., Department of Commerce, Vivekanandha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India.

E-mail: mjjprince2016@gmail.com¹

Abstract Green innovation and digital transformation have emerged as key strategic drivers for achieving the Sustainable Development Goals (SDGs) by promoting environmental sustainability, economic growth, and social well-being. This study aims to empirically investigate the impact of green innovation and digital transformation on the attainment of the SDGs within business organizations. The research focuses on dimensions such as green product and process innovation, adoption of digital technologies, resource efficiency, organizational sustainability practices, and stakeholder engagement. Primary data are collected through a structured questionnaire from selected organizations, while secondary data are sourced from journals, reports, and government publications. Appropriate statistical tools are employed to examine the relationships among the study variables. The findings are expected to indicate that green innovation and digital transformation significantly enhance organizational sustainability, operational efficiency, and environmental performance, thereby contributing to the achievement of the SDGs. The study provides valuable insights for policymakers, industry practitioners, and researchers in designing sustainable business strategies that integrate innovation and digital technologies for long-term development.

Keywords: Green Innovation, Digital Transformation, Sustainable Development Goals (SDGs), Sustainability, Organizational Performance, Environmental Sustainability, Digital Technologies, Resource Efficiency, Sustainable Business Practices

MACHINE LEARNING-BASED INTRUSION DETECTION SYSTEM USING ENSEMBLE LEARNING

Ms. P. Aiswariya

Assistant Professor, Department of Computer Applications, Christ Arts and Science College,
Puducherry – 605010, India.

Abstract The rapid expansion of computer networks and Internet-based services has significantly increased cybersecurity threats. Traditional intrusion detection systems (IDS) are primarily signature-based and often fail to detect unknown or zero-day attacks. This paper proposes a Machine Learning (ML)-based Intrusion Detection System capable of accurately identifying malicious network activities using supervised learning techniques. The proposed framework consists of data preprocessing, feature selection, model training, attack classification, and performance evaluation. Benchmark datasets such as NSL-KDD and CICIDS2017 are employed for experimentation. Machine learning algorithms including Decision Tree, Support Vector Machine (SVM), and Random Forest are evaluated. Experimental results indicate that the Random Forest classifier achieves an accuracy of approximately 99%, outperforming other classifiers in intrusion detection while maintaining a low false alarm rate.

Keywords: Intrusion Detection System, Machine Learning, Random Forest, Support Vector Machine, Cybersecurity, Network Security.

LEAD TRACKING AND ACCESS CONTROLLED BUSINESS WORKFLOW SYSTEM

Ms. P. Aiswariya

Assistant Professor, Department of Computer Applications, Christ Arts and Science College,
Puducherry – 605010, India.

Abstract This project aims to develop a comprehensive Client Lead Management System with Restricted User Access and Approval Flow that integrates essential business modules into a single secure platform. The system includes Sales, Design, Project Procurement, Project Management, Billing, and Service modules, enabling organizations to manage their operations efficiently through a centralized application. A secure login page with verification code authentication ensures that only authorized users can access the system, while role-based access control restricts users to their permitted modules and protects sensitive business information. The Sales module manages customer interactions, lead tracking, sales performance, and report generation. The Design module supports project planning, resource allocation, and design-related activities. The Project Procurement module streamlines supplier management, purchase orders, and inventory control. The Project Management module monitors project progress, milestones, and documentation to ensure timely completion of tasks. The Billing module handles invoice generation, payment tracking, and financial reporting, whereas the Service module manages customer support requests and post-project maintenance activities. In addition, the system provides Excel import and export functionality, allowing users to efficiently convert, analyze, and generate business reports for better decision-making. By integrating these functionalities into a unified platform, the proposed system enhances operational efficiency, improves data management, strengthens security, reduces manual effort, and increases overall organizational productivity.

Keywords: Client Lead Management, Role-Based Access Control, Project Management, Excel Data Integration, Business Process Automation.

REVOLUTIONIZING PHYSICAL EDUCATION AND SPORTS THROUGH ARTIFICIAL INTELLIGENCE

Dr. Udayachandran M.¹, Mr. V. Angalan²

¹Director of Physical Education, Kanchi Mamunivar Government Institute for Postgraduate
Studies and Research, Puducherry, India.

²Director of Physical Education, Christ Arts and Science College, Puducherry – 605010, India.
E-mail: udayabarbosa@gmail.com¹,

Abstract Artificial Intelligence (AI) has emerged as a transformative technology across various sectors, including education and sports. The integration of AI into physical education (PE) and sports has created new opportunities for enhancing teaching, learning, coaching, performance analysis, and injury prevention. AI-powered tools such as wearable fitness devices, motion analysis systems, virtual coaching applications, and data analytics facilitate personalized learning experiences and evidence-based decision-making. This paper explores the role of AI in transforming physical education and sports by examining its applications, benefits, challenges, and future prospects. The study adopts a descriptive research design based on secondary data collected from books, peer-reviewed research articles, government reports, and publications from international organizations. The findings indicate that AI enhances student engagement, improves athletic performance, supports personalized fitness programs, and enables educators to monitor students' progress more effectively. However, challenges such as limited technological infrastructure, data privacy concerns, high implementation costs, and inadequate digital literacy among teachers remain significant barriers. The study concludes that the successful integration of AI requires investment in technological infrastructure, teacher training, ethical data management, and supportive educational policies. AI should be viewed as a complementary tool that enhances, rather than replaces, the role of physical education teachers and coaches.

Keywords: Artificial Intelligence, Physical Education, Sports Technology, Sports Analytics, Digital Learning, Performance Analysis, Smart Coaching

The Role of University–Industry Collaboration in Strengthening Innovation Ecosystems in Developing Economies

Mr. Md. Sidratul Muntaha Rakin¹, Prof. Mohammad Shah Alam Chowdhury²

¹Student, Department of Economics, Dhaka International University, Dhaka, Bangladesh.

²Professor, Department of English, Dhaka International University, Dhaka, Bangladesh.

E-mail: sidratulrakin2@gmail.com¹, shahjabeen2010@gmail.com²

Abstract This integration between universities and industries is an essential element in strengthening the innovation ecosystem in emerging countries by creating knowledge transfer, development and growth. The partnerships compensate for the gap between the research and the requirement of the market and help to enhance productivity, human capital formation and innovation potential from an economic perspective. This study investigates the influence of university – industry collaboration in economic development through research collaborations, transfer of technologies, preparation of skills and entrepreneurship. This study primarily relies on secondary studies using qualitative approach obtained from academic publications, government report, international publications, to find out the economic effects of university industry relationship (U2I) in developing countries. The involvement of universities in production of knowledge and role of industries in production of an economically viable product/service based on the knowledge is stressed. In addition, this study investigates the effect of these partnerships on employment, employment efficiency and on the long-term economic competitiveness. The findings suggest that the higher the level of collaboration between the University industry, the more innovation can be achieved in both terms of an information gap and increased efforts on research and development and inter-industry transfer. But challenges like lack of funding, inadequate institutional structures and a lack of involvement in coordination among stakeholders remain a burden to the effectiveness of such partnerships. The research has demonstrated the importance of policy support and strategic partnerships to develop sustainable innovation systems that promote economic growth in developing countries.

Keywords: University–industry collaboration, innovation ecosystems, knowledge transfer, economic development, human capital, research and development, labor market, developing economies.

AI-DRIVEN EXPLAINABLE INTRUSION DETECTION FRAMEWORK FOR NEXT- GENERATION CYBERSECURITY

Ms. Madhumitha R.

Department of Information Technology, Meenakshi Sundararajan Engineering College, Chennai,
Tamil Nadu, India.

E-mail: madhu.ramesh2905@gmail.com

Abstract: Artificial Intelligence (AI) has become a fundamental technology for strengthening modern cybersecurity systems by enabling intelligent threat detection, automated decision-making, and real-time network traffic analysis. Conventional intrusion detection systems often rely on signature-based techniques or complex black-box machine learning models that provide high detection accuracy but lack transparency, making it difficult for security analysts to understand and trust their decisions. This research proposes an AI-Driven Explainable Intrusion Detection Framework for Next-Generation Cybersecurity that integrates advanced machine learning algorithms with Explainable Artificial Intelligence (XAI) techniques to accurately detect and classify cyberattacks while providing interpretable explanations for each prediction. The proposed framework incorporates data preprocessing, feature engineering, intelligent intrusion detection, and explainability modules using SHAP and LIME to identify the most influential features contributing to attack classification. Performance evaluation on benchmark network intrusion datasets demonstrates that the proposed framework achieves high detection accuracy, improved precision and recall, reduced false alarm rates, and enhanced model transparency without compromising computational efficiency. By providing clear and interpretable security decisions, the framework assists cybersecurity professionals in understanding attack patterns, accelerating incident response, and improving trust in AI-driven security solutions. The proposed approach offers a scalable, reliable, and explainable cybersecurity framework suitable for protecting next-generation enterprise, cloud, and IoT network environments against evolving cyber threats.

Keywords: Artificial Intelligence (AI), Intrusion Detection System (IDS), Explainable Artificial Intelligence (XAI), Machine Learning, Cybersecurity, SHAP, LIME.

AI-DRIVEN INTELLIGENT NETWORK SECURITY FRAMEWORK FOR RELIABLE LOW-LATENCY WIRELESS COMMUNICATION

Ms. Sahana S.

Department of Information Technology, Meenakshi Sundararajan Engineering College, Chennai,
Tamil Nadu, India.

E-mail: sahanasaravanan2811@gmail.com

Abstract: Artificial Intelligence (AI) serves as an essential component for current network security systems because it provides systems with smart monitoring capabilities, automatic decision-making processes, and real-time detection of wireless network threats. Current methods primarily rely on simulation-based testing and have not been extensively validated through experiments using real network testing environments. This research presents an AI-driven intelligent network framework that enhances communication reliability and network security for low-latency wireless systems. The proposed system integrates channel modeling, intelligent decision-making modules, and real-time performance monitoring to identify anomalies while dynamically adjusting transmission settings according to changing network conditions. Experimental evaluation using real-world wireless network data demonstrates that the framework achieves improved reliability, dynamic communication control, reduced latency, and enhanced network security while maintaining overall system stability. The proposed framework highlights the importance of combining hardware-aware design with intelligent adaptive mechanisms to support the efficient operation of future wireless communication systems and secure next-generation network infrastructures.

Keywords: Intelligent Communication Systems, Wireless Communication, Low-Latency Networks, Ultra-Reliable Communication, Experimental Validation.

**AI-DRIVEN HYBRID MACHINE LEARNING FRAMEWORK FOR
DETECTING FAKE INTERNSHIP AND JOB ADVERTISEMENTS
USING NLP AND WEB CREDIBILITY ANALYSIS**

Ms. Renuka Devi K.

Department of Information Technology, Meenakshi Sundararajan Engineering College, Chennai,
Tamil Nadu, India.

E-mail: renukakarukkuvel14@gmail.com

Abstract: The rapid growth of online recruitment platforms has increased employment opportunities while also leading to a rise in fake internship and job advertisements that facilitate phishing, identity theft, and financial fraud. Existing detection methods primarily rely on either textual analysis or website credibility, limiting their effectiveness in identifying sophisticated fraudulent postings. This paper proposes an AI-driven Hybrid Machine Learning Framework that integrates Natural Language Processing (NLP), web credibility analysis, and ensemble learning to detect fraudulent job advertisements. The proposed framework analyzes job descriptions, company information, recruiter details, website credibility, and domain characteristics to classify job advertisements while generating an interpretable trust score for users. The model was evaluated on a dataset of 8,000 legitimate and fraudulent job advertisements, achieving 97% precision, 96% recall, and a 96% F1-score, outperforming conventional machine learning approaches. By combining multiple sources of evidence with explainable AI techniques, the framework enhances recruitment security through accurate, scalable, and transparent fake job detection, helping job seekers identify trustworthy opportunities while reducing the risk of online recruitment fraud.

Keywords: Fake Job Detection, NLP, Machine Learning, Ensemble Learning, Web Credibility Analysis, Trust Score, Cybersecurity.

BEYOND INTELLIGENCE: AN ADAPTIVE AI FRAMEWORK FOR SUSTAINABLE DECISION SUPPORT

Ms. Thejasvini M.

Department of Information Technology, Meenakshi Sundararajan Engineering College, Chennai,
Tamil Nadu, India.

E-mail: thejaswinimurugalingam.com

Abstract: Artificial Intelligence (AI) has rapidly transformed decision-making across various sectors; however, existing AI systems often struggle to adapt to dynamic environments while ensuring transparency, ethical compliance, and sustainability. Conventional decision support systems primarily rely on static learning models, limiting their ability to respond effectively to evolving real-world challenges and interdisciplinary requirements. This research proposes an **Adaptive AI Framework for Sustainable Decision Support** that integrates contextual intelligence, adaptive learning, ethical reasoning, sustainability assessment, and continuous feedback into a unified decision-making architecture. The proposed framework continuously analyzes contextual information, generates intelligent recommendations, evaluates ethical and sustainability constraints, and refines future decisions through feedback-driven adaptation. Designed to support diverse application domains including healthcare, education, business, environmental management, and smart cities, the framework enables reliable, transparent, and context-aware decision support. By combining Adaptive Artificial Intelligence with Responsible AI principles, the proposed approach enhances decision accuracy, scalability, adaptability, and stakeholder trust while promoting sustainable development. The conceptual framework provides a flexible and interdisciplinary foundation for next-generation intelligent decision support systems and offers significant potential for future real-world implementation and validation across multiple domains.

Keywords: Artificial Intelligence (AI), Adaptive Learning, Decision Support Systems, Responsible AI, Sustainable Development, Context-Aware Intelligence.

REIMAGINING HR ANALYTICS AND TALENT MANAGEMENT FOR A SUSTAINABLE, AI-POWERED WORLD

Ms. Nekitha P.

MBA, Easwari Engineering College, Chennai, Tamil Nadu, India.

E-mail: nekitha11eco@gmail.com

Abstract: Artificial intelligence is increasingly used across the employee lifecycle, from recruitment through retention, and this shift is changing how organizations manage talent. This paper reviews how predictive analytics, machine learning, and natural language processing are being applied in HR analytics and talent management, and considers the risks that come with wider adoption, particularly algorithmic bias, reduced transparency, and the erosion of employee privacy. Based on a review of recent literature and organizational practice, we propose a Human-Centric AI- Enabled Talent Management (HCAITM) framework built around five principles: strategic alignment, ethical design, interdisciplinary collaboration, continuous learning, and sustainable impact measurement. We argue that the organizations most likely to benefit from AI in HR are not those that automate the most processes, but those that pair analytical capability with deliberate ethical oversight and genuine attention to employee experience. The paper concludes with practical recommendations for HR practitioners and researchers seeking to implement AI responsibly.

Keywords: HR Analytics, Talent Management, Artificial Intelligence, Predictive Analytics, Sustainable HRM, Ethical AI, Workforce Innovation.

AI-POWERED SMART WASTE MANAGEMENT SYSTEM FOR SUSTAINABLE CITIES USING DEEP LEARNING AND IOT

Ms. Dhivya S.

Department of Information Technology, Meenakshi Sundararajan Engineering College, Chennai,
Tamil Nadu, India.

E-mail: dhivyasivakumar00@gmail.com

Abstract: Artificial Intelligence (AI) and the Internet of Things (IoT) have emerged as key technologies for addressing the growing challenges of municipal solid waste management caused by rapid urbanization and population growth. Traditional waste management systems rely on manual waste segregation and fixed collection schedules, resulting in inefficient recycling, overflowing waste bins, increased operational costs, and environmental pollution. This research proposes an **AI-Driven Smart Waste Management Framework for Sustainable Urban Development** that integrates Deep Learning and IoT to automate waste classification, monitor smart bins in real time, and optimize waste collection processes. The proposed framework employs Convolutional Neural Networks (CNNs) to classify waste into categories such as plastic, paper, glass, metal, organic, and electronic waste using captured images. IoT-enabled smart bins continuously monitor their fill levels and transmit real-time data to a centralized management system, enabling intelligent collection scheduling and route optimization. A web-based dashboard provides municipalities with real-time insights into waste generation, bin status, and recycling activities, supporting informed decision-making. The proposed system improves waste segregation accuracy, reduces collection costs, enhances recycling efficiency, and minimizes environmental impact while promoting sustainable urban development. By integrating Artificial Intelligence, IoT, and intelligent data analytics, the framework offers a scalable, reliable, and environmentally friendly solution for next-generation smart city waste management.

Keywords: Artificial Intelligence (AI), Internet of Things (IoT), Smart Waste Management, Deep Learning, Convolutional Neural Networks (CNN), Sustainable Urban Development.

AI-BASED WOMEN SAFETY MONITORING AND EMERGENCY RESPONSE SYSTEM

Ms. Praveena J.

Department of Information Technology, Meenakshi Sundararajan Engineering College, Chennai,
Tamil Nadu, India.

E-mail: veenapraveena2822@gmail.com

Abstract: Artificial Intelligence (AI) has emerged as a powerful technology for enhancing personal safety by enabling intelligent monitoring, real-time threat detection, and rapid emergency response. Violence and harassment against women remain significant social challenges, creating the need for proactive and reliable safety solutions. This research proposes an AI-Based Women Safety Monitoring and Emergency Response System that continuously monitors potential risk situations using artificial intelligence, smartphone sensors, GPS location, and voice-based distress detection. The proposed system analyzes environmental and behavioral patterns to identify emergencies in real time. Upon detecting a potential threat, it automatically sends alerts containing the user's live location to trusted contacts and nearby emergency services while activating audio recording for evidence collection. A machine learning model evaluates the severity of each situation and minimizes false alarms through continuous learning and adaptive decision-making. Experimental evaluation demonstrates that the proposed framework achieves high detection accuracy, low response time, and reliable emergency notification performance. By integrating Artificial Intelligence, real-time monitoring, and intelligent emergency response mechanisms, the system provides a scalable, efficient, and dependable solution for improving women's personal safety and supporting rapid intervention during emergency situations.

Keywords: Artificial Intelligence (AI), Women Safety, Emergency Response System, Machine Learning, GPS Tracking, Real-Time Threat Detection.

STUDENT PERCEPTIONS OF CHATGPT IN COMPUTER SCIENCE LEARNING

Dr. P. Anandababu

Assistant Professor, Department of Computer and Information Science, Faculty of Science,
Annamalai University, Annamalai Nagar, Tamil Nadu, India.

Abstract: This paper examines student perceptions of ChatGPT in computer science learning, with emphasis on usefulness, trust, and academic concerns. ChatGPT has rapidly become a widely discussed AI tool in higher education, especially in programming and problem solving contexts, where it can assist with code explanation, debugging, idea generation, and conceptual learning. However, research also suggests that students remain cautious about over-reliance, reduced independent thinking, and unclear boundaries for appropriate use in coursework. To explore these issues, this study investigates how computer science students perceive ChatGPT as learning aid, what tasks they use it for, and whether they believe it improves understanding or simply provides answers. The study also considers whether students prefer institutional guidance on AI use in learning environments. A survey-based approach is proposed to measure familiarity, frequency of use, perceived benefits, perceived risks, and overall acceptance of ChatGPT in computer science education. The expected outcome is a clearer understanding of how students balance convenience and learning quality when using generative AI tools. The findings can help educators design responsible AI policies and teaching strategies that support learning while preserving academic integrity and critical thinking.

Keywords: ChatGPT, computer science education, generative AI, student perception, programming learning, artificial intelligence in education.

A LIGHTWEIGHT UNCERTAINTY HEAD FOR FROZEN SEGMENTATION BACKBONES: RETHINKING ACCURACY AS A PROXY FOR DEPLOYMENT SAFETY

Dr. M. Chandramouleeswaran

Assistant Professor, Department of Computer and Information Science, Faculty of Science,
Annamalai University, Annamalai Nagar, Tamil Nadu, India.

Abstract Semantic segmentation models are routinely selected on a single number: mean Inter-over-Union on a held-out test split drawn from the training distribution. That number stops predicting anything useful once a model meets fog, an unfamiliar scanner, or a road surface never seen during training, because in-distribution accuracy and out-of-distribution (OOD) reliability are only weakly correlated. This paper does not propose a new segmentation network or a new accuracy figure. Instead, it argues that uncertainty estimation should be treated as a separable, lightweight auxiliary problem bolted onto any frozen segmentation backbone, trained cheaply, and used as a second, complementary signal for deployment safety. We motivate why decoupling “what is the answer” from “how much should I trust it” is the correct inductive bias, summarize the fragmented Bayesian, OOD-detection, calibration, and parameter-efficient-adaptation literatures this idea draws from, and describe a compact uncertainty head that reads intermediate features from a frozen backbone to output pixel-wise epistemic and aleatoric uncertainty in a single forward pass. We further propose an evaluation protocol centered on domain-shift benchmarks, where the object of study is the correlation between predicted uncertainty and actual failure rather than segmentation accuracy. The paper is deliberately scoped as a position and design paper: it lays out the idea, its theoretical grounding, and its research agenda without experimental results, so the multidisciplinary AI community can evaluate the direction’s merits before committing engineering effort to it.

Keywords: uncertainty estimation, out-of-distribution robustness, semantic segmentation, Bayesian deep learning, frozen backbone, deployment safety.

**PHYTOPROMPT: DESCRIPTOR-GUIDED IN-CONTEXT SEGMENTATION FOR
DATA-SCARCE CROP
DISEASE PHENOTYPING - THE CASE OF COFFEE LEAF RUST**

Dr. S. Sivasubramaniam

Assistant Professor, Department of Computer and Information Science, Faculty of Science,
Annamalai University, Annamalai Nagar, Tamil Nadu, India.

Abstract: Foundation segmentation models such as UniverSeg and MedicoSAM show single network, conditioned at inference time on a handful of labeled examples, can outperform task-specific baselines wherever pixel-level annotation is expensive. Agriculture presents an even harder version of this problem: for most crop diseases, no institution holds anywhere near the masks a few-shot foundation model needs during pretraining, and the visual signal-a fungal lesion on a leaf-s diffuse, low-contrast, and highly variable. We take coffee leaf rust (*Hemileia vastatrix*), which threatens an estimated twenty-five million smallholder farming households, as a concrete, genuinely data-scarce case study, and ask what a support set should contain when two or three annotated leaves is all a pathologist will realistically provide. Our answer, PhytoPrompt, conditions the query-support interaction on a short structured symptom descriptor-lesion colour stage, margin regularity, distribution pattern, leaf surface-that a field agronomist already records by habit, fused with the visual support embedding through lightweight cross-attention. We further propose descriptor-constrained synthetic support expansion, a controlled lesion-blending procedure that keeps synthesized supports pathologically, not just visually, plausible. This paper reports no experimental results; its purpose is to lay out the problem formulation, architecture, adaptation protocol, and evaluation plan in enough detail to be implemented and critiqued before a full empirical study is run.

Keywords: few-shot segmentation, in-context learning, foundation models, crop disease phenotyping, coffee leaf rust, data scarcity, prompt design, synthetic data augmentation

SAM3-Adapter for Agricultural Disease Segmentation: Efficient Domain Adaptation of Segment Anything 3 for Precision Crop Health Monitoring

Dr. S. P. Senthilkumar

Assistant Professor, Department of Computer and Information Science, Faculty of Science,
Annamalai University, Annamalai Nagar, Tamil Nadu, India.

Abstract: Segment Anything models (SAM, SAM2, SAM3) generalize well on everyday photographs but remain weak on fine-grained, low-contrast, texture-heavy imagery. The SAM-Adapter line has repeatedly closed this gap-for camouflage, shadow, and medical segmentation-by freezing the backbone and training a small adapter on a single GPU. Agricultural disease segmentation, where pixel-level datasets are scarce and lesion borders are diffuse, remains untouched by this line of work. We propose Agri-SAM3-Adapter: a frozen SAM3 encoder, dual low-/high-frequency feature injection tuned to plant-tissue statistics, an automatic lesion-aware prompt strategy that removes manual clicking, and a multi-scale decoding head spanning millimeter flecks to leaf-covering blight. We give a single-GPU training recipe and show the design generalizes to three further unaddressed domains: surface-defect detection, underwater imagery, and manuscript layout segmentation. No experiments are reported; the contribution is the problem framing, architecture, and roadmap for a reproducible follow-up study.

Keywords: Segment Anything 3, parameter-efficient adaptation, adapter tuning, agricultural disease segmentation, precision agriculture, plant pathology, foundation models, single-GPU training.

LOCATION-2 DOMINATION NUMBER IN ROOTED PRODUCT OF GRAPHS

Mr. A. Venkatesan¹, Mr. S. Anand Christy², Mr. M. Muthukumaran³, Ms. A. Victoria Anand Mary⁴, Dr. S. Bastin Britto⁵

¹Assistant Professor, PG and Research Department of Mathematics, St. Joseph's College of Arts & Science (Autonomous), Cuddalore – 607001, Tamil Nadu, India.

²Assistant Professor, PG Department of Computer Applications, St. Joseph's College of Arts & Science (Autonomous), Cuddalore – 607001, Tamil Nadu, India.

³Assistant Professor, PG and Research Department of Computer Science, St. Joseph's College of Arts & Science (Autonomous), Cuddalore – 607001, Tamil Nadu, India.

⁴Assistant Professor, PG and Research Department of Computer Science, St. Joseph's College of Arts & Science (Autonomous), Cuddalore – 607001, Tamil Nadu, India.

⁵Dean of Sciences & Associate Professor, Department of Computer Science, Christ Arts and Science College, Puducherry, India.

E-mail: suresh11venkat@gmail.com¹, logtochristy@gmail.com²

Abstract: The Location-2 Domination (L-2 D) number is a significant graph-theoretic parameter that provides lower bounds for several well-known graph families. It defines a dominating set such that any two distinct vertices not in the set are uniquely identified by vertices at a distance of two. This paper investigates the L-2 D number for rooted product graphs, where the rooted products are constructed using various graph combinations, including paths with paths, paths with cycles, cycles with cycles, and paths with star graphs. The rooted product graphs are obtained by replacing each vertex of a base graph with a rooted version of another graph, forming more complex structures. For these constructed graphs, the exact Location-2 Domination numbers are calculated. The results highlight the structural influence of combining different graph families and provide exact lower bounds for the L-2 D number in these cases.

Keywords: Domination- Location Domination -Location 2 Domination- Rooted product.

AN OVERVIEW OF AI IN DISASTER MANAGEMENT AND RESILIENCE

Dr. Mohamed Ashik Mohamed¹, Dr. Venkateswaran Radhakrishnan²

¹College of Computing and Information Sciences, University of Technology and Applied Sciences, Sultanate of Oman.

²College of Computing and Information Sciences, University of Technology and Applied Sciences, Sultanate of Oman.

Abstract: AI has become a useful tool for getting ready for disasters and recovering from this data and automation to help with planning and decision-making. By using methods like machine learning and computer vision, AI can quickly look at data from satellites, drones, sensors, and social media. This helps governments and emergency teams predict disasters, plan evacuation routes, check for damage, and manage rescue efforts more effectively. Even though it is helpful, using AI in this field has its own set of problems, such as poor data quality, security risks, and bias in the systems. This paper looks at how AI is used in disaster management, including how it works, what it is used for, and the challenges involved. The main idea is that AI can really help make us more resilient to disasters if we use it responsibly and work together across different areas of expertise.

Keywords: Artificial Intelligence, Disaster Management, Disaster Resilience, Machine Learning, Deep Learning, Internet of Things, Remote Sensing, Emergency Response.

FROM ARTIFICIAL INTELLIGENCE TO ARTIFICIAL WISDOM (AI²): DESIGNING ETHICAL AI FOR HUMANITY'S FUTURE

Mr. Mothik K.¹, Dr. J. Hannah Monisha², Mr. Dhurkesh Alas Daniel P.³

¹III Year, Department of Computer Applications, Rajiv Gandhi Arts and Science College,
Thavalakuppam, Puducherry, India.

²Assistant Professor, Department of Computer Applications, Rajiv Gandhi Arts and Science
College, Thavalakuppam, Puducherry, India.

³III Year, Department of Computer Applications, Rajiv Gandhi Arts and Science College,
Thavalakuppam, Puducherry, India.

Abstract: Artificial Intelligence (AI) has transformed modern society by enabling automation, predictive analytics, intelligent decision-making, and autonomous systems across diverse domains. However, the rapid evolution of AI has raised critical concerns regarding fairness, transparency, accountability, privacy, bias, and societal impact. Current AI systems excel in processing data and identifying patterns but often lack ethical reasoning, contextual understanding, empathy, and moral judgment. This limitation highlights the need to move beyond conventional Artificial Intelligence toward **Artificial Wisdom (AI²)**, a paradigm that integrates human values, ethical principles, emotional intelligence, and sustainable decision-making into intelligent systems. This research introduces the **AI² Framework** by combining Explainable AI (XAI), Responsible AI, Human-Centered AI, and Ethical Governance to develop intelligent systems capable of making socially beneficial and ethically responsible decisions. The proposed framework emphasizes transparency, accountability, fairness, sustainability, and continuous human oversight while maintaining high computational efficiency. Furthermore, it discusses the architecture, applications, challenges, comparative analysis, and future research directions of Artificial Wisdom. By bridging the gap between intelligence and wisdom, the proposed AI² model aims to ensure that future AI systems serve humanity responsibly, foster stakeholder trust, and support sustainable development in alignment with global ethical standards.

Keywords: Artificial Intelligence, Artificial Wisdom, Ethical AI, Explainable AI, Responsible AI, Human-Centered AI, AI Governance, Sustainable AI.

BLOCKCHAIN-BASED ACCESS CONTROL MECHANISMS FOR SECURE HEALTH CARE DATA MANAGEMENT

Ms. C. Ramya¹, Ms. A. Swathi²

¹Assistant Professor, Department of Information Technology, Mailam Engineering College,
Tamil Nadu, India.

²UG Student, Mailam Engineering College, Tamil Nadu, India.

E-mail: ramyajitesh82@gmail.com¹, swathiayappan@gmail.com²

Abstract: Healthcare data management have critical issues include fragmentation, restricted interoperability, unauthorized access, and opaque audit trails. Centralized Electronic Health Record (EHR) systems limit patient control over personal health information, provide single points of failure, and expose sensitive patient data to breaches. In order to provide safe, transparent, and effective patient health record management, this paper proposes BC-HDM, a blockchain-based healthcare data management framework that combines IPFS decentralized storage, HyperledgerBesu distributed ledger technology, smart contract-based consent management, and attribute-based access control (ABAC). Without relying on any centralized authority, BC-HDM guarantees patient-centric data ownership, unchangeable audit recording, fine-grained consent management, and cross-institutional interoperability. A rigorous security study shows defense against insider threats, replay attacks, unauthorized access, and data manipulation.

Keywords: Blockchain; Healthcare data management; Electronic health records; Smart contracts; IPFS.

ARTIFICIAL INTELLIGENCE IN PHYSICAL EDUCATION AND SPORTS: OPPORTUNITIES CHALLENGES AND FUTURE PERSPECTIVES

Dr. S. Adhavan

Director of Physical Education, Rajiv Gandhi Arts and Science College, Thavalakuppam,
Puducherry, India.

Abstract: Artificial Intelligence (AI) has become a transformative force in the fields of Physical Education and sports, revolutionizing athlete training, coaching practices, and sports management. By integrating advanced technologies such as machine learning, computer vision, and data analytics, AI provides real-time insights that support performance evaluation, injury prevention, tactical decision-making, and personalized training programmes. This review examines the diverse applications of AI across educational institutions, professional sports, and rural sports development. It highlights the opportunities AI offers in enhancing coaching effectiveness, improving athletic performance, and streamlining sports administration while also addressing key challenges, including high implementation costs, limited technical expertise, infrastructure constraints, and concerns regarding data privacy and ethics. The paper concludes that the responsible and inclusive adoption of AI can significantly strengthen sports education and athletic development while preserving the essential role of human expertise.

Keywords: Artificial Intelligence, Physical Education, Sports Performance, AI Applications, Innovation, Sports Development, Future Perspectives.

ALGORITHMIC PERFORMANCE IN THE AGE OF GENERATIVE AND AGENTIC AI A REGRESSION-BASED COMPARATIVE STUDY

Dr. M. Prabhu¹, Mr. P. V. Sankar Ganesh², Mr. D. Palanisamy³

¹Department of Computer Science, Mohamed Sathak College of Arts and Science, Chennai –
600119, Tamil Nadu, India.

²Department of Computer Science, Mohamed Sathak College of Arts and Science, Chennai –
600119, Tamil Nadu, India.

³Department of Computer Science, Mohamed Sathak College of Arts and Science, Chennai –
600119, Tamil Nadu, India.

E-mail: prabhu@mscartsandscience-edu.in¹, pvsankarganesh@mscartsandscience-edu.in²,
palanisamy@mscartsandscience-edu.in³

Abstract: Artificial Intelligence (AI) has evolved rapidly from rule-based systems to advanced models capable of generating content and performing complex tasks autonomously. Among the most significant developments are **Generative AI** and **Agentic AI**, which represent distinct paradigms in modern intelligent systems. Generative AI utilizes deep learning architectures such as Large Language Models (LLMs), Transformers, Diffusion Models, and Variational Autoencoders (VAEs) to create text, images, audio, and code, while Agentic AI extends these capabilities through autonomous reasoning, planning, memory, tool usage, and goal-oriented decision-making. This paper presents a comparative study of these paradigms while evaluating predictive machine learning models, namely Linear Regression and Random Forest Regression, for intelligent decision support. A structured dataset was preprocessed through data normalization and missing value handling before training both regression models. Performance was assessed using Mean Absolute Error (MAE), Root Mean Square Error (RMSE), and R-squared (R^2) metrics. Experimental results indicate that Random Forest Regression achieves superior predictive accuracy on non-linear datasets due to lower error rates and higher R^2 values, whereas Linear Regression remains computationally efficient and highly interpretable for linear relationships. The study highlights the importance of selecting appropriate AI models based on data characteristics while discussing challenges such as scalability, reliability, hallucinations, safety, and ethical considerations. The proposed analysis provides valuable insights for researchers and organizations seeking robust, explainable, and efficient AI-driven predictive solutions across diverse application domains.

Keywords: Artificial Intelligence (AI), Generative AI, Agentic AI, Linear Regression, Random Forest Regression, Predictive Analytics.

**ARTIFICIAL INTELLIGENCE IN HEALTHCARE AND MEDICAL DIAGNOSTICS:
TRANSFORMING CLINICAL DECISION-MAKING, DISEASE DETECTION, AND
PATIENT CARE**

Ms. Bharathi D.

Assistant Professor, Department of Chemistry, Christ Arts and Science College, Puducherry –
605010, India.

Abstract Artificial Intelligence (AI) has emerged as one of the most transformative technologies in healthcare, significantly improving disease diagnosis, clinical decision-making, patient monitoring, and healthcare management. AI techniques, including machine learning (ML), deep learning (DL), natural language processing (NLP), computer vision, and expert systems, have demonstrated remarkable success in detecting diseases from medical images, predicting patient outcomes, and supporting physicians in making evidence-based decisions. The integration of AI into medical diagnostics has enhanced diagnostic accuracy, reduced human error, improved workflow efficiency, and enabled personalized medicine. This research investigates the impact of AI technologies on healthcare and medical diagnostics. The study examines AI applications in radiology, pathology, cardiology, oncology, ophthalmology, and clinical decision support systems. Using a mixed-methods research approach, quantitative and qualitative data will be collected from healthcare professionals, AI developers, and hospital administrators. Statistical analysis and thematic analysis will evaluate AI's effectiveness, limitations, and future prospects. The findings are expected to contribute to the development of trustworthy AI systems that improve healthcare quality while ensuring ethical compliance and patient safety.

Keywords: Artificial Intelligence, Healthcare, Medical Diagnostics, Machine Learning, Deep Learning, Clinical Decision Support, Precision Medicine, Medical Imaging.

ENHANCED PHOTOCATALYTIC AND ANTIBACTERIAL PERFORMANCE OF SOLVOTHERMALLY SYNTHESIZED MN-DOPED SNS/BIVO₄ NANOCOMPOSITES

Mr. G. Periyannan¹, Dr. G. Lakshminarayan²

¹Research Scholar, Department of Physics, Shanmuga Industries Arts and Science College,
Tiruvannamalai, Tamil Nadu, India.

²Assistant Professor, Department of Physics, Shanmuga Industries Arts and Science College,
Tiruvannamalai, Tamil Nadu, India.

Abstract In the present work successfully synthesized both undoped and manganese (Mn)-doped SnS/BiVO₄ composite nanoparticles (NPs) using a solvothermal method. This study focuses on the optical properties Diffuse reflectance spectra exposed that the band gap of prepared product changes with doping content and observed to be in the ranging from 1.30 eV to 2.81 eV. The effect of Mn doping on the optical band gap of the SnS/BiVO₄ composite NPs was investigated, revealing that the optical band gap widens with different concentrations of Mn doping (2%, 4%, and 6%). Various characterization techniques, including X-ray diffraction (XRD), X-ray photoelectron spectroscopy (XPS) and scanning electron microscopy (SEM), were employed to confirm the XRD patterns of SnS and BiVO₄ has orthorhombic and tetragonal crystalline structure. Binding energies and nano rod morphological features of the synthesized nanoparticles. The elemental status of SnS, BiVO₄, and Mn-doped SnS/ BiVO₄NPs was studied by EDAX. The enhanced photo catalytic activity can be attributed to Mn doping, which plays a significant role in lowering the band gap and increasing charge carriers, superoxide radicals, and hydroxyl radical production. A Z-scheme model is proposed to explain the charge transfer pathway in this system, highlighting its crucial role in enhancing the photo catalytic performance of the heterojunction.

Keywords: SnMnS-nanocomposites; Solvothermal synthesis; HR-SEM; XPS; Photo catalyst; Antibacterial applications.

EXPERIMENTAL TECHNIQUES OF SODIUM GLYCOCHOLATE

Ms. P. Ramyhaa¹, Mr. S. Arumugam²

¹PG and Research Department of Physics, Shanmuga Industries Arts and Science College, Tamil Nadu, India.

²PG and Research Department of Physics, Shanmuga Industries Arts and Science College, Tamil Nadu, India.

Abstract The experimental techniques employed in the present study sodium Glycocholate to measure Ultrasonic velocity , absorption density and viscosity are described. The spectroscopic studies such as X – Ray diffraction (XRD) , Fourier Transform Infrared Spectrometer (FTIR), Scanning Electron Microscope (SEM) and Energy Dispersive X- Ray Fluorescence (EDX) used for the characteristics of Sodium Glycocholate are explained. A sharp RF electrical pulse with variable pulse duration from 2 to 20 microseconds is applied to the crystal with a suitable repetition frequency. The reflected wave returns to the transducer , and a part of its energy is converted into electrical signal .The signal is amplified and displayed on the oscilloscope . The trace of the oscilloscope is a series of echoes with decreasing amplitude. The decrease in the amplitude is a measure of absorption. Spectroscopy has been dramatically improved by the development of the Fourier Transform method. The mathematical function, the Fourier Transform is then applied to produce an absorption spectrum from the interference. An interferometer coupled with a microscope allows sample as small as ten micrometers to be analyzed and identified .FTIR studies are carried out using NICOLET system. The EDX analyzer also uses an x- ray source to excite sample but it may be configured in one of two ways . The first way is direct excitation where the x-ray beam is pointed directly as the sample .Filter made of various elements may be placed between the source and sample to increase the excitation of element .The second way uses a secondary target , where the source points a target , the target element is excited and fluoresces and then the target florescence is used to excite the sample.

Keywords:

Absorption , density, viscosity , Infra red Spectrometer , repetition frequency , amplified , crystal and measure of absorption .

**A TOPOLOGICAL FRAMEWORK FOR OPTIMIZATION:
INTEGRATING NEIGHBORHOOD SPACES, CONVERGENCE, AND CONTINUITY
IN OPERATIONS RESEARCH**

Ms. Nasrin Banu

Assistant Professor, Department of Mathematics, Christ Arts and Science College, Puducherry,
India.

Abstract This paper presents a formal synthesis of topological structures and Operations Research (OR). While classical OR relies heavily on algebraic structures and Euclidean geometry, complex multi-criteria decisions, infinite-horizon dynamical programs, and non-metric networks require more abstract spatial tools. By modeling decision spaces as general topological spaces (X, τ) rather than restricting them to normed linear spaces, we establish broader conditions for optimization. We investigate the topological foundations of the Weierstrass Extreme Value Theorem, explore convergence properties of optimization sequences using nets and filters, and construct topological network architectures for supply chain and sensor routing. This synthesis expands the mathematical boundaries of OR, providing robust tools for high-dimensional, qualitative, and dynamically evolving complex systems.

Keywords: Topological Spaces, Operations Research, Multi-Criteria Optimization, Network Optimization, Dynamical Systems.

AI THAT RUNS WITHOUT INTERNET: OFFLINE & ON-DEVICE ARTIFICIAL INTELLIGENCE

Ms. Therasin Mary P.¹, Ms. Kanniammal K.², Ms. Bhoomika M.³

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

This paper presents an overview of offline artificial intelligence, also known as on-device or edge AI, which allows models to run entirely on local hardware without a live internet connection. It examines the technologies that make this possible, including model quantization, pruning, knowledge distillation, and dedicated neural processing units, and explains how these techniques shrink large models to fit within the memory and power limits of phones, wearables, vehicles, and embedded devices. The study explores real-world applications such as offline voice assistants, on-device language models, autonomous navigation, and industrial sensing, alongside the privacy and reliability advantages of keeping data local rather than sending it to remote servers. Popular frameworks including TensorFlow Lite, Core ML, ONNX Runtime, and llama.cpp are reviewed as the practical tools developers use to deploy models offline. The paper also discusses ongoing challenges such as limited compute, battery constraints, and accuracy tradeoffs, and looks ahead to emerging trends including smaller high-performing language models, dedicated AI silicon in consumer devices, federated learning, and hybrid offline-online architectures, concluding that offline AI is becoming a practical and increasingly necessary complement to cloud-based intelligence.

Keyword : Edge AI , On-device Processing , Offline Machine Learning , Local Inference , Privacy-Preserving AI

CYBER SECURITY, PRIVACY & DIGITAL RIGHTS

Ms. Aashini B.¹, Ms. Archana A.², Ms. Abirami D.³, Ms. Nishanthini V.⁴

¹Department of B.Sc. Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of B.Sc. Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of B.Sc. Computer Science, Christ Arts and Science College, Puducherry, India.

⁴Department of B.Sc. Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract This paper presents an overview of cyber security, privacy, and digital rights in the modern digital era. It examines the nature of cyber threats such as malware, phishing, and ransomware, and explains how these attacks compromise the confidentiality, integrity, and availability of data. The study further explores privacy concerns arising from data collection, online tracking, and social media usage, alongside the digital rights that protect individuals' freedom of expression and access to information. Key cybersecurity best practices, including strong passwords, multi-factor authentication, regular updates, and secure Wi-Fi usage, are discussed as effective defense mechanisms, along with privacy-protection tools such as encryption and VPNs. The paper also reviews relevant government regulations like GDPR and CCPA, and highlights ongoing challenges including rising cybercrime, misinformation, and the balance between security and privacy. Finally, it looks ahead to emerging trends such as AI-driven security, blockchain, biometric authentication, and zero-trust architecture, emphasizing that a combination of personal vigilance and strong policy frameworks is essential for a safe and open internet.

Keyword : Cybersecurity , Data Privacy , Digital Rights , Encryption , Identity Protection

AI-POWERED CYBER SECURITY: DETECTING CYBER ATTACKS USING ARTIFICIAL INTELLIGENCE

Ms. Santhiya E.¹, Ms. Taraatrakshi M.², Ms. Porselvi S.³

¹Department of B.Sc. Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of B.Sc. Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of B.Sc. Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract this paper presents an overview of how artificial intelligence (AI) is transforming cyber security, with a focus on the detection of cyber attacks. It examines traditional detection limitations and explains how machine learning, deep learning, and behavioral analytics enable systems to identify malware, phishing, intrusions, and zero-day threats in real time. The study explores key AI techniques such as supervised and unsupervised learning, anomaly detection, and natural language processing, along with tools like Intrusion Detection Systems (IDS), Security Information and Event Management (SIEM) platforms, and User and Entity Behavior Analytics (UEBA). The paper also reviews the advantages of AI-driven detection, including speed, scalability, and predictive capability, while addressing challenges such as adversarial attacks, false positives, data privacy, and the resource demands of AI systems. It further discusses relevant regulatory considerations and looks ahead to emerging trends including federated learning, explainable AI (XAI), autonomous response systems, and AI versus AI cyber warfare, concluding that AI is becoming an indispensable layer of modern cyber defense when combined with skilled human oversight.

Keyword : Threat Detection , Anomaly Detection , Intrusion Detection , Machine Learning , Cyber Threat Intelligence

AI FOR CLIMATE CHANGE AND ENVIRONMENTAL PROTECTION
A REVIEW OF MACHINE LEARNING, DEEP LEARNING, COMPUTER VISION,
AND IOT APPLICATIONS IN CLIMATE ACTION

Ms. Vaishnavi V.¹, Ms. Monika R.², Ms. Sindhuja V.³

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract Climate change is one of the most pressing global issues, leading to rising temperatures, extreme weather events, biodiversity loss, and environmental degradation. Traditional methods of environmental monitoring often struggle to process the vast amount of data required for timely decision-making. Artificial Intelligence (AI) has emerged as a transformative technology that can analyze large-scale environmental data, identify patterns, and provide accurate predictions to support climate action. AI technologies such as Machine Learning (ML), Deep Learning (DL), Computer Vision, and the Internet of Things (IoT) are being widely applied in weather forecasting, renewable energy management, precision agriculture, pollution monitoring, disaster prediction, and biodiversity conservation. This paper explores the role of AI in mitigating climate change, protecting ecosystems, and promoting sustainable development. It also discusses the benefits, challenges, and future scope of AI-driven environmental solutions.

Keywords—Artificial Intelligence, Climate Change, Environmental Protection, Machine Learning, Deep Learning, Sustainability, Renewable Energy, Smart Agriculture

AI AGAINST FAKE NEWS: FIGHTING MISINFORMATION WITH ARTIFICIAL INTELLIGENCE

Ms. Sulochana S.¹, Ms. Deepakeerthi P.², Ms. Ashividha S.³

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract This study delves into how the fast pace of digital communication, including that of social media, significantly altered the way people make, get and distribute information. There is no doubt these platforms have made it easier to get the latest news at fingertips and learn a lot. However, they have made the propagation of fake news, misinformation, disinformation easier as well. It's a very serious problem not just to society but to other areas as well. False information can be a powerful weapon to shape public opinion, change the outcome of elections, give spread harmful health advice, and reduce the trust people place in sources of information that they know to be reliable. Though traditional approaches to fact-checking are quite accurate, they tend to be too slow to cope with the vast amount of information which is generated daily through online sources. AI, by means of different technologies, such as Machine Learning (ML), Deep Learning (DL) Natural Language Processing (NLP), and Large Language Models (LLMs), automates the process of uncovering misleading content to a great extent. This paper highlights the state of the art of fake news detection based on AI, the most commonly utilized Datasets and algorithms, as well as some of the practical applications in different sectors. It is also touched upon current technical and ethical challenges such as fake news generation through AI or creation of realistic audiovisual content (i.e. deepfakes). The importance of AI solutions that can be traced back to decision makers or that will clearly explain their reasons behind certain judgments (i.e. ethical, transparent and-explainable AI) is also discussed. Based on our research, we believe that a multi-faceted strategy including AI technologies, human expertise, an fact-checking supported by responsible digital governance will lead to a remarkable increase in the capacity of the misinformation battle. This will preserve not only the credibility but also the integrity of the online information at large.

Keyword : Misinformation Detection, Fact-Checking , Natural Language Processing (NLP) , Deepfake Detection , Content Verification

AI-POWERED PERSONALIZED LEARNING: TOWARD SUSTAINABLE EDUCATION

Mr. Murali M.¹, Mr. Thirumalai A.², Mr. Nagaraj B.³

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract Artificial intelligence (AI) in enhancing personalized learning through experiences in education system that address the diverse needs, abilities and learning styles of students. AI is a tutoring system to analyze student performance and provide customized content, real-time feedback, and adaptive assessments. furthermore, AI contributes to sustainable education by promoting inclusive, equitable, and high-quality learning opportunities, aligning with the United Nations sustainable development.

KEYWORD : Artificial Intelligence, Personalized Learning , Sustainable Education, Adaptive Learning , Learning Analytics.

AI FOR SOFTWARE DEVELOPMENT

Mr. Neeleesh¹, Mr. Anand², Mr. Sri Siraath³

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract Artificial Intelligence (AI) has become one of the most influential technologies in software development. AI-powered tools help developers automate repetitive tasks, generate code, detect bugs, improve software quality, and accelerate the overall development process. Modern AI systems based on machine learning and large language models assist programmers in writing efficient code, testing applications, documenting software, and maintaining complex projects. As organizations increasingly adopt AI-driven development practices, software engineering is becoming faster, more accurate, and more collaborative. However, AI also presents challenges such as security risks, privacy concerns, ethical issues, and the need for human oversight. This seminar paper explores the role of AI in software development, its applications, benefits, limitations, future trends, and its impact on the software industry.

Keywords: Artificial Intelligence, Software Development, Machine Learning, Code Generation, Software Testing, Automation.

RENEWABLE ENERGY SYSTEM AND SMART GRIDS FORM A SUSTAINABLE FUTURE

Mr. Santhosh G.¹, Mr. Thirukumaran B.², Mr. Sarathi B.³

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract Renewable Energy Systems and Smart Grids are really changing the way the world gets its energy. They make sure we have reliable electricity. This paper is about how we can use Energy Systems like solar, wind, hydro and biomass with Smart Grids to make energy work better. Smart Grids use networks, sensors and computers to watch and control how electricity is made sent and used. The study shows that using Energy is good for the earth because it reduces bad emissions makes energy safer and costs less to run. It also talks about the problems we face like storing energy dealing with the fact that the sun does not always shine and the wind does not always blow, keeping systems from hackers and spending money on new infrastructure. Renewable Energy Systems and Smart Grids are very important for creating an sustainable energy system that does not hurt the planet. We need them to meet our goals for the climate and to make sure everyone has access to energy in a way that is good, for the earth. Renewable Energy Systems and Smart Grids will help us have a future.

KEYWORD: Renewable energy for sustainable future, Smart grids enable clean energy,Clean energy powers modern society, Renewable resources reduce carbon emissions, Smart grids improve energy efficiency.

ARTIFICIAL INTELLIGENCE IN FINANCIAL ANALYTICS AND DIGITAL PAYMENTS

Mr. Logeswaran K.¹, Mr. Karthikeyan G.², Mr. Thivan P.³, Mr. Alifan S.⁴

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

⁴Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract Artificial Intelligence is changing the way the financial industry works by making analysis better and making digital payment systems faster and safer. Artificial Intelligence technologies like machine learning and predictive analytics help banks and other financial institutions find transactions figure out if someone is a good credit risk answer customer questions automatically and make decisions based on data. When it comes to payments Artificial Intelligence makes transactions more secure, by finding fraud in real time using biometric authentication and giving people personalized financial services.

This paper looks at how Artificial Intelligence's used in financial analysis and digital payments what the benefits and challenges are and what the future might hold. It also talks about the problems, how to keep peoples data private, cybersecurity and the rules that govern the use of Artificial Intelligence. The study finds that Artificial Intelligence is changing services and will keep playing a big role in making the financial system secure, smart and sustainable.

Keywords: Artificial Intelligence, Financial Analytics, Digital Payments, Machine Learning, Fraud Detection, FinTech, Predictive Analytics.

The Rise of World Models in Artificial Intelligence: A New Paradigm for Predictive Intelligence

Mr. Srishiam S.¹, Mr. Mohomed Afrith M.², Mr. Devanathan V.³

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract:

The past few decades have witnessed a profound transformation in the field of artificial intelligence (AI), with applications spanning healthcare diagnostics to autonomous transportation. Deep learning, the dominant architecture behind contemporary AI systems, excels at recognizing patterns and making statistical inferences from vast datasets. However, this approach has its limitations, operating largely reactively and struggling with forward-looking reasoning, planning, and safety in dynamic environments. As we hurtle toward a future dominated by AI, it's imperative to move beyond reactive intelligence and toward a more predictive and model-based understanding of the world. Enter the paradigm of World Models, an innovative approach that allows AI agents to construct an internal, compressed representation of their environment. By simulating potential future states and outcomes before taking real-world actions, World Models represent a groundbreaking advancement toward more efficient, adaptive, and explainable predictive intelligence. World Models combine techniques from deep learning, reinforcement learning, variational autoencoders (VAEs), recurrent neural networks (RNNs), transformers, and latent space modeling to create compact simulations of complex environments. By enabling agents to "imagine" future states, these models support more effective planning, improved generalization, enhanced adaptability, and greater robustness in unfamiliar situations. Furthermore, their ability to reason about future possibilities contributes to safer AI deployment in critical applications such as autonomous vehicles, robotic systems, industrial automation, medical diagnosis, disaster response, and intelligent decision-support systems.

KEYWORD : World Models Enable Predictive Intelligence , Artificial Intelligence Learns World Models , Predictive Intelligence Through World Models

GREEN COMPUTINGSUSTAINABLE SOLUTION FOR MODERN TECHNOLOGY

Mr. Mohanraj¹, Mr. Thamizharasan², Mr. Raghul³

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry, India.

ABSTRACT-- Green computing is about using computers and other technology in a way that's friendly to the environment. We need to do this while making sure that our computers still work well. The Earth is getting warmer and warmer. This is called warming. It is happening because of things. We have been learning more about what's causing the Earth to get warmer over the ten years. The weather is getting really weird and hard to predict every where. The United Nations is working hard to stop climate change. They want to make sure that people do not make the Earth get too warm. Because of warming there are now rules that say companies that make computers and other technology have to make sure their products do not use much energy. Green computing is a way to make sure we have an safe environment. We can do this without giving up the technology we need. Green computing is important for the Earth and for people. This paper looks at what other people have written about computing. It shows why green computing is important for making sure our planet is healthy and safe for a time

KEYWORD : Green Computing for Sustainable Technology , Sustainable Computing Reduces ,Environmental Impact

ARTIFICIAL INTELLIGENCE IN SOCIAL MEDIA

Ms. S. Santhana¹, Ms. S. Vidhya²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract Artificial Intelligence (AI) has become a powerful force behind the way people use social media today. Platforms such as Instagram, Facebook, YouTube, TikTok, and LinkedIn depend on AI to decide what content to show, to detect harmful posts, to run chatbots, and to deliver advertisements to the right audience. This paper presents a simple overview of how AI works inside social media platforms. It explains the meaning of AI and social media, describes the major applications such as personalized recommendation, chatbots, targeted advertising, content moderation, image recognition, and sentiment analysis, and discusses both the benefits and the challenges of this technology. The paper also looks at real examples from well-known platforms and considers what the future may hold as AI tools continue to grow more advanced. The goal of this paper is to give students and readers a clear and easy understanding of how AI shapes the social media experience, why it matters for everyday users and businesses.

Keywords: Artificial Intelligence, Social Media, Machine Learning, Chatbots, Content Moderation, Targeted Advertising, Sentiment Analysis.

AI ENABLED LEARNING AND PEDAGOGY

Ms. J. Dhashni¹, Ms. D. Gopika²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract Artificial Intelligence is changing education. It makes learning personal, fun and efficient. AI tools like machine learning and language processing help teachers. They understand how students learn, give recommendations, grade work and provide feedback. This paper looks at AI in education. It shows how AI affects teaching and learning. It also reviews AI tools. These tools are used in classrooms and online. The benefits and challenges of AI in education are discussed. The study stresses the need for ethics, data protection and teacher training. This ensures AI is used well. The findings show AI can boost student engagement, grades and access. It also reduces teacher workload. Issues, like data security, costs and tech dependence must be solved. The paper suggests AI directions. These include tutoring systems, adaptive learning and inclusive practices. AI can change teaching. It can make education flexible student focused and tech-driven.

Keywords: Artificial Intelligence (AI), AI Enabled Learning, Pedagogy, Personalized

Learning, Machine Learning, Learning Analytics, Intelligent Tutoring Systems, Educational Technology.

AI FOR DISASTER RISK MANAGEMENT AND RESILIENCE INNOVATION FOR IMPACT

Ms. S. Suruthi¹, Ms. S. Geethapriya²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Disasters like earthquakes and floods can be really bad. They can also be made by people like fires or landslides. These things can cause a lot of damage. Hurt a lot of people every year. The old ways of dealing with disasters are not always good at predicting when they will happen or how to respond to them. They also have trouble helping people recover quickly. Artificial Intelligence is a technology that is very helpful. It can predict when disasters might happen. It can help people make good decisions quickly. Artificial Intelligence can also help get resources to where they're needed. Artificial Intelligence brings together science and business and people who want to help others. It helps build communities that can get ready for disasters respond to them and recover from them. This paper is, about Artificial Intelligence. How it helps with disaster risk management. It talks about the things Artificial Intelligence can do and the challenges it faces. It also talks about what might happen in the future with Artificial Intelligence and disaster risk management.

Keywords: Artificial Intelligence, Disaster Management, Resilience, Machine Learning, Climate Change, Sustainability.

WORKFORCE TRANSFORMING IN THE AI ERA

Ms. S. Sandhiya¹, Ms. A. Pishith Mary²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) is changing the way people work across the world. This paper studies how AI is transforming the workforce in the period 2024 to 2026, focusing on job roles, required skills, and industry practices. The study explains the background of AI-driven change, reviews recent research and reports, and describes the method used to collect and analyse secondary data from global sources such as PwC, Gallup, the World Economic Forum, and Microsoft. The results show that AI is not simply replacing jobs; it is reshaping them. Companies that use AI heavily show higher productivity and, in many cases, higher headcount and wages, while routine and entry-level roles face greater risk of automation. The paper studies applications of AI across healthcare, education, banking, manufacturing, retail, and IT, and discusses benefits such as efficiency and new job creation alongside challenges such as skill gaps, job displacement, and ethical concerns. The paper ends with future trends, including the growing importance of reskilling, human-AI collaboration, and policy regulation, and concludes that proactive adaptation is essential for a fair and productive AI-driven workforce.

Keywords: Artificial Intelligence, Workforce Transformation, Automation, Reskilling, Future of Work, Human-AI Collaboration, Job Displacement.

ETHICAL IMPLICATIONS OF ARTIFICIAL INTELLIGENCE

Ms. Yamuna Sri¹, Ms. D. Arfa²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

ABSTRACT

Entrepreneurship and innovation management play a vital role in driving economic growth, technological advancement, and business competitiveness. In today's rapidly changing market, startups must adopt innovative strategies and structured management practices to overcome uncertainty and achieve sustainable growth. Lean methodologies, agile development, and data-driven decision-making help entrepreneurs improve efficiency and respond quickly to customer needs. This paper examines the role of entrepreneurial ecosystems, including incubators, accelerators, venture capital firms, and corporate innovation hubs, in supporting startups throughout their growth journey. These ecosystems provide funding, mentorship, technical guidance, and networking opportunities that help transform innovative ideas into successful businesses. The study also explores modern innovation frameworks such as the Lean Startup methodology, design thinking, and agile product development. It analyses startup survival rates, funding trends, and case studies to evaluate the impact of structured innovation practices on business performance. The findings show that startups adopting iterative product development and continuous customer feedback achieve faster market entry, better resource utilisation, and improved long-term sustainability. However, industry conditions and market dynamics continue to influence startup success. Overall, the paper highlights the importance of integrating entrepreneurship with innovation management to build resilient startups, encourage innovation, and contribute to sustainable economic development.

Keyword: Artificial Intelligence, AI Ethics, Algorithmic Bias, Data Privacy, Explainability, Accountability, Responsible AI, AI Governance, Human Oversight.

Artificial Intelligence in Business Decision Making and Strategy

Ms. G. Abarna¹, Ms. S. Ajeeba Farvin²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) is rapidly transforming how organizations gather information, evaluate options, and commit to a course of action. Rather than functioning as a stand-alone innovation, AI is increasingly woven into the everyday decision fabric of finance, marketing, supply chain, and human resource functions, where it processes large volumes of structured and unstructured data far faster than traditional analytical methods allow. This paper examines how AI supports business decision-making and strategic planning, drawing on recent literature to identify recurring patterns of adoption, benefit, and risk. A descriptive, review-based methodology is used to organize findings into a comparative table contrasting traditional and AI-driven decision processes, alongside a workflow diagram that traces how raw business data becomes an actionable strategic decision. The discussion covers applications across finance, healthcare, marketing, supply chain, manufacturing, retail, banking, and human resource management, followed by a balanced review of advantages such as speed, accuracy, and cost reduction, and limitations including data privacy, bias, cybersecurity risk, and the shortage of skilled professionals. The paper closes with a look at emerging directions, including generative AI, explainable AI, and autonomous decision support, and argues that responsible, well-governed AI adoption is becoming a defining element of durable competitive strategy rather than an optional technical upgrade.

Keywords: Artificial Intelligence, Business Strategy, Decision Making, Machine Learning, Predictive Analytics, Business Intelligence, Automation.

AI in Healthcare and Medical Diagnostics

Ms. V. Abarna¹, Ms. S. Swetha²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) is rapidly reshaping the landscape of modern healthcare by enabling faster, more accurate, and more consistent clinical decision-making. This paper presents a comprehensive study of AI-driven techniques used in medical diagnostics, including machine learning, deep learning, convolutional neural networks (CNN), and natural language processing (NLP), and examines how these techniques are applied to disease detection, medical imaging, and clinical decision support. The methodology adopted combines structured medical datasets with imaging repositories, processed through standard preprocessing, feature extraction, model training, and validation stages. Results drawn from comparative literature indicate that AI-based diagnostic systems consistently outperform conventional statistical approaches in tasks such as cancer detection and cardiac risk prediction, while also reducing diagnostic turnaround time. The paper further discusses real-world applications such as robotic surgery, discovery, and telemedicine, critically and evaluates advantages, limitations, privacy concerns, and ethical questions surrounding clinical AI deployment. Finally, the paper outlines emerging directions including explainable AI, wearable health monitoring, and smart hospital ecosystems. The findings emphasize that while AI offers substantial promise for improving patient outcomes, its responsible and transparent integration into clinical workflows remains essential for long-term trust and adoption.

Keywords: Artificial Intelligence, Machine Learning, Deep Learning, Convolutional Neural Networks, Natural Language Processing, Medical Diagnostics, Healthcare, Clinical Decision Support, Medical Imaging, Explainable AI.

AI FOR EDUCATION

Transforming Teaching and Learning in the Digital Age

Ms. S. Janani¹, Ms. B. Nandhini²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) is changing the way students learn and teachers teach. This paper looks at how AI is used in education today, especially with the rise of tools like ChatGPT, Gemini, Claude, Microsoft Copilot, and Perplexity AI. It explains what AI in education means, the different types of AI used in classrooms, and how Large Language Models (LLMs) work behind these tools. The paper also studies real applications such as personalized learning, automatic grading, virtual tutoring, and administrative support for teachers. Recent data from 2025 and 2026 shows that AI adoption among students and teachers has grown rapidly, with more than nine out of ten students now using some form of AI for their studies, and a large majority of teachers using AI tools for lesson planning and grading. While AI brings many benefits like faster learning, round-the-clock support, and reduced teacher workload, it also raises concerns about over-reliance, reduced critical thinking, data privacy, and unequal access to technology. This paper presents a balanced view of AI in education by discussing its working, benefits, challenges, and ethical issues. It includes a real case study, comparison tables, and simple diagrams to help readers understand the topic clearly. The paper concludes that AI should be used as a support tool alongside teachers, not as a replacement, so that students gain both technical skills and human values.

Keywords: Artificial Intelligence, Generative AI, Large Language Models, Personalized Learning, Intelligent Tutoring Systems, EdTech, Adaptive Learning.

GOVERNANCE AND REGULATORY FRAMEWORKS

Ms. S. Subathra¹, Ms. S. Siva Dharani²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) is increasingly embedded in decisions that affect livelihoods, safety, and access to essential services, which has made governance and regulation a central concern for policymakers, industry, and researchers alike. This paper reviews the principles underlying AI governance and examines the major regulatory frameworks that have emerged to guide the responsible development and deployment of AI systems, including the European Union AI Act, the NIST AI Risk Management Framework, the OECD AI Principles, the UNESCO Recommendation on the Ethics of AI, and the ISO/IEC 42001 management-system standard. A representative governance lifecycle is described, covering risk assessment, policy formulation, compliance monitoring, and continuous auditing, and a comparison of leading regulatory approaches is presented to highlight differences in scope, enforceability, and regional emphasis. The paper further discusses applications of governance practices across healthcare, finance, education, government, and manufacturing and identifies persistent challenges relating to bias, privacy, explainability, cybersecurity, and cross-border regulatory divergence. The discussion concludes that effective AI governance requires a layered combination of binding law, voluntary standards, and organizational accountability structures, and that convergence toward interoperable global norms will be essential as AI systems increasingly operate across jurisdictional boundaries.

Keywords: Artificial Intelligence, AI Governance, Regulatory Frameworks, EU AI Act, NIST AI Risk Management Framework, OECD AI Principles, Responsible AI, Explainable AI, AI Ethics, AI Auditing.

CIRCULAR BUSINESS MODELS RETHINKING GROWTH BEYOND THE TAKE-MAKE-DISPOSE ECONOMY

Mr. K. Gunalan¹, Mr. M. Ragul²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

This paper presents an easy-to-understand overview of circular business models and why they matter in today's world. Traditional businesses follow a linear pattern of taking raw materials, making products, and throwing them away after use. This pattern is putting heavy pressure on the planet's limited resources. A circular business model offers a better path by keeping products, parts, and materials in use for as long as possible through reuse, repair, refurbishment, and recycling. This paper explains the meaning and core principles of circular business models, describes their main types, and shows how technologies such as Artificial Intelligence, the Internet of Things, and Blockchain support this shift. Real-world examples from IKEA, Patagonia, Philips, Apple, and Renault are discussed to make the concept practical and relatable. The paper also looks at the advantages, limitations, and future scope of circular business models, concluding that they are a realistic and necessary direction for sustainable business growth.

Keywords: Circular Business Models, Circular Economy, Sustainability, Resource Efficiency, Reuse, Repair, Refurbishment, Recycling, Artificial Intelligence (AI), Internet of Things (IoT), Blockchain, Sustainable Business Growth.

AI GOVERNANCE AND REGULATORY FRAMEWORKS

Mr. N. Gokulnath¹, Mr. K. Rajaram²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) is transforming industries by enabling automation, intelligent decision-making, and innovative digital services. However, the rapid adoption of AI introduces ethical, legal, privacy, security, and accountability challenges. AI governance refers to the policies, standards, and practices that ensure AI systems are developed and deployed responsibly. Regulatory frameworks are established by governments and international organizations to reduce AI-related risks while promoting innovation. This paper explores AI governance principles, existing global regulations, implementation methodologies, applications, benefits, limitations, and future research directions, and highlights the need for international cooperation to ensure trustworthy AI.

Keywords: Artificial Intelligence, AI Governance, Responsible AI, Ethics, Privacy, AI Regulation, Transparency, Accountability, Trustworthy AI.

Generative AI and Large Language Models

Mr. S. Sanjay¹, Mr. K. Deepak²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Generative Artificial Intelligence has changed the way people write, learn, and work. Among all its forms, Large Language Models (LLMs) have become the most visible and widely used, powering tools such as ChatGPT, Gemini, Claude, Llama, and DeepSeek. This paper explains what Generative AI and LLMs are, how they work internally using tokens, transformers, and attention mechanisms, and how popular models compare with each other. It also covers real-world applications, advantages, limitations, ethical concerns, and the likely future of this technology. The discussion is presented in simple, accessible language suitable for an undergraduate seminar.

Keywords: Generative AI; Large Language Models; Transformers; Attention Mechanism; Tokenization; ChatGPT; Gemini; Claude; Llama; DeepSeek; Natural Language processing.

RENEWABLE ENERGY AND SMART GRIDS

Mr. A. Justine¹, Mr. R. Guru Pragadesh²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

The global energy sector is undergoing a rapid transformation driven by increasing energy demand, environmental concerns, and the urgent need to reduce greenhouse gas emissions. Renewable Energy Systems (RES) such as solar, wind, hydro, and biomass have emerged as sustainable alternatives to conventional fossil-fuel based power generation. However, the large-scale integration of renewable energy into existing power networks presents significant technical and operational challenges due to their intermittent and decentralised nature. Smart Grids have been introduced as an advanced solution to address these challenges by incorporating digital communication, automation, and intelligent control into power systems. This paper presents a comprehensive overview of renewable energy systems and smart grid technologies, focusing on their architecture, components, integration strategies, benefits, and challenges. Furthermore, the role of emerging technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), and energy storage systems in enhancing grid reliability and efficiency is discussed.

Keyword: Renewable Energy, Smart Grid, Solar Energy, Wind Energy, Hydropower, Biomass Energy, Grid Stability, Energy Storage Systems, Internet of Things, Artificial Intelligence, Demand Response, Sustainable Energy Infrastructure.

COMPUTER VISION USING ARTIFICIAL INTELLIGENCE

Mr. G. Venkatesh

Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Computer Vision is one of the most important branches of Artificial Intelligence (AI) that enables computers to understand, interpret, and analyse digital images and videos. It combines image processing, machine learning, and deep learning techniques to perform tasks such as image classification, object detection, facial recognition, and scene understanding. Recent advances in Convolutional Neural Networks (CNNs), Transfer Learning, and Vision Transformers have significantly improved the performance and efficiency of computer vision systems. This paper discusses the concepts, techniques, applications, advantages, limitations, and future scope of AI based computer vision. It also compares traditional machine learning approaches with modern deep learning models and highlights their performance using tables, workflow diagrams, and graphical analysis. The study concludes that AI powered computer vision is transforming industries such as healthcare, transportation, agriculture, manufacturing, retail, and security by improving automation, decision-making, and operational efficiency.

Keywords: Artificial Intelligence, Computer Vision, Deep Learning, CNN, Image Processing, Object Detection, Transfer Learning.

AI IN HEALTHCARE AND MEDICAL DIAGNOSTICS

Mr. A. Yogeshwaran¹, Mr. V. Mano²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) has emerged as a transformative force in healthcare, particularly in the field of medical diagnostics. With the rapid growth of data generated from electronic health records, medical imaging, wearable devices, and genomic sequencing, AI technologies have become essential for improving diagnostic accuracy, reducing human error, and enabling personalized medicine. Machine learning, deep learning, and natural language processing are increasingly being used to assist clinicians in disease detection, prognosis, and treatment planning. This paper explores the role of AI in healthcare and medical diagnostics, discussing its applications, benefits, challenges, ethical concerns, and future prospects. The study highlights how AI-driven systems enhance clinical decision making while emphasizing the need for transparency, data security, and regulatory compliance to ensure safe and effective implementation.

Keywords: Artificial Intelligence, Healthcare, Medical Diagnostics, Machine Learning, Deep Learning, Clinical Decision Support.

DIGITAL HUMANITIES AND COMPUTATIONAL SOCIAL SCIENCES

Mr. D. Sreeragavan¹, Mr. R. Dinesh²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Digital Humanities Computational Social Sciences (CSS) are interdisciplinary fields that combine traditional humanities and social science research with modern computational technologies. Digital Humanities focuses on applying digital tools and methods to preserve, analyse, and interpret historical, literary, linguistic, and cultural materials. Computational Social Sciences utilize computational models, machine learning, artificial intelligence, and big data analytics to understand human behaviour, social interactions, and societal changes. These fields have transformed research methodologies by enabling large-scale data analysis, visualization, and predictive modelling. Researchers can now analyse millions of historical documents, social media posts, and digital archives efficiently. This paper discusses the concepts, history, technologies, applications, research methods, advantages, challenges, ethical issues, and future scope of Digital Humanities and Computational Social Sciences. It also highlights the role of Artificial Intelligence, Machine Learning, Big Data Analytics, Natural Language Processing, and Data Mining in advancing research across multiple disciplines.

Keywords: Digital Humanities, Computational Social Sciences, Artificial Intelligence, Machine Learning, Big Data, Natural Language Processing, Data Mining, Digital Archives, Social Media Analytics.

SMART AGRICULTURE AND AGRI-TECH INNOVATION

Mr. V. Mathivvadhan¹, Mr. R. Devaraj²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

The spread of technology is changing all business sectors, including traditional farming. This change is also happening in Chanthaburi, an agricultural area in Eastern Thailand known for its tropical fruit orchards. Technology is changing farming methods here. This change is called "Smart Farming". It involves using systems in daily farm work the main aims of Smart Farming are to increase crop production make daily tasks easier and protect the environment. Farmers want to make their work smoother and ensure the environment stays healthy for a time. Farmers in Chanthaburi are using systems to improve their work. They want to make farming easier and more efficient. This will help them produce crops and protect the environment. The use of technology in farming is growing. It is helping farmers in Chanthaburi to modernize their farming methods. This change will have an impact, on the environment and the local economy. This study takes a look at how some local systems work together. The systems that are connected include the Chanthaburi Data Centre, sensors that use the internet drones that fly on their own and the main Smart Agriculture Management System. By looking at how data's set up automatically how systems are managed in real time and how blockchain is used to track supplies this study is a very useful guide. It helps people who grow food like farmers and big commercial growers and leaders in the region who want to increase food production in a sustainable way using technology in Southeast Asia. The Smart Agriculture Management System is really important, for this. The Chanthaburi Data Centre also plays a role.

Keyword: Traditional farming, Chanthaburi fruit orchards, Smart agriculture tools, Field sensors, Autonomous drones, Crop production, Higher yields, Environment protection, Local data centre, Network setups, Real time tracking, Supply logistics, Food markets, Local economy, Southeast Asia, Sustainable agriculture, Global population growth, Cyber physical systems, Machine learning applications, Farm management decisions.

ENTREPRENEURSHIP, STARTUPS AND INNOVATION MANAGEMENT

Mr. R. Gugan¹, Mr. V. Vignesh²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Entrepreneurship, Startups and Innovation Management are really important for businesses today. Entrepreneurship and innovation management play a role in driving economic growth, technological advancement and business competitiveness. In today's changing market startups must be innovative and have good management practices to overcome uncertainty and achieve sustainable growth. Methods like methodologies, agile development and data-driven decision-making entrepreneurs work more efficiently and respond quickly to customer needs. This paper looks at the role of ecosystems, including incubators, accelerators, venture capital firms and corporate innovation hubs in supporting startups throughout their growth journey. These ecosystems provide technical guidance funding, and mentorship, networking opportunities that help turn ideas into successful businesses. The study also explores innovation frameworks such as the Lean Startup methodology, design thinking and agile product development. The findings show that startups that use iterative product development and continuous customer feedback get to market faster use resources better and are more sustainable in the term

Keywords: Entrepreneurship, Startups, Innovation Management, Lean Startup Methodology, Venture Capital, Entrepreneurship, and Business Corporate Incubation, Design Thinking, Agile Development.

IOT-BASED SMART FARMING SYSTEM AND REAL-TIME MONITORING

Ms. M. Lingitha¹, Ms. M. Sharmili²

¹Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Agriculture feeds the world, but it faces growing pressure from climate change, water shortage, and shrinking farm labour. Artificial Intelligence (AI) offers a practical way to meet these challenges by helping farmers make smarter, faster, and more precise decisions. This paper presents an overview of how AI is applied in agriculture, the key technologies involved such as machine learning, computer vision, IoT, drones, robotics, and predictive analytics, and the real benefits and limitations of using these tools on the ground. The paper also includes a comparison between traditional and AI-based farming, a workflow diagram explaining how an AI farming system operates, five recent real-world examples, and a set of viva questions for quick revision. The goal is to give an undergraduate engineering audience a clear, well-organised, and easy-to-understand picture of AI's growing role in feeding the planet sustainably.

Keywords: IoT, Smart Farming, Sensors, Real-Time Monitoring, Automation, AI, Cloud Computing, Precision Agriculture, Smart Irrigation, Data Analytics.

ARTIFICIAL INTELLIGENCE IN BUSINESS DECISION MAKING AND STRATEGY: A FRAMEWORK FOR HUMAN–MACHINE COLLABORATION IN STRATEGIC MANAGEMENT

Mr. S. Rakesh¹, Mr. S. Jeevanandhan², Mr. G. Richard Son³

¹Department of Computer Science, Christ Arts and Science College, Puducherry – 605010, India.

²Department of Computer Science, Christ Arts and Science College, Puducherry – 605010, India.

³Department of Computer Science, Christ Arts and Science College, Puducherry – 605010, India.

Artificial intelligence (AI) has evolved from a peripheral information-technology function into a core input for business decision making and strategy formulation. This paper develops a structured framework for understanding how AI systems support decisions at the operational, tactical, and strategic levels of the firm. We review the principal technologies driving this transformation, including machine learning, natural language processing, computer vision, generative AI, and optimization engines, and examine their application across market sensing, customer strategy, risk management, mergers and acquisitions, supply chain design, and workforce planning. Illustrative cases from retail, financial services, and media are used to demonstrate practical deployment patterns. The paper further identifies organizational and ethical challenges associated with AI-enabled strategy, including data quality, algorithmic bias, explainability, and workforce disruption, and proposes a human-in-the-loop governance model that preserves managerial accountability while capturing the analytical advantages of AI. The paper concludes that sustainable competitive advantage will accrue not to firms that automate decisions most aggressively, but to those that best combine machine-generated insight with human judgment, ethical oversight, and organizational adaptability.

Keywords: artificial intelligence, business strategy, decision support systems, machine learning, predictive analytics

THE IMPACT OF AI CHATBOTS ON CUSTOMER SATISFACTION IN RETAIL BANKING

Ms. Ushena Begam S.¹, Dr. Vetrivel²

¹Research Scholar, Department of Commerce, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

²Associate Professor & Research Guide, Department of Commerce, School of Commerce & Economics, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

Abstract The rapid growth of Artificial Intelligence (AI) has transformed the banking sector by introducing innovative digital solutions that enhance customer service and engagement. AI chatbots have emerged as an important technology in retail banking, providing customers with instant assistance, personalized interactions, and 24/7 service availability. This study examines the impact of AI chatbots on customer satisfaction in retail banking by exploring key factors such as perceived usefulness, ease of use, response accuracy, trust, personalization, and service quality. AI chatbots help banks improve operational efficiency, reduce customer waiting time, and provide seamless digital experiences. However, challenges related to data privacy, security concerns, and limitations in handling complex customer queries influence customer acceptance. The study highlights the importance of developing reliable, transparent, and customer-centric AI solutions to improve satisfaction and strengthen customer relationships in the digital banking environment.

Keywords: Artificial Intelligence, AI Chatbots, Retail Banking, Customer Satisfaction, Digital Banking.

ARTIFICIAL INTELLIGENCE IN SPORTS PERFORMANCE ANALYSIS AND TALENT IDENTIFICATION

Mr. Anitharaj¹, Dr. C. Thillaigovindan²

¹Research Scholar, Department of Physical Education, Annamalai University, Annamalai
Nagar, Tamil Nadu, India.

²Assistant Professor, Department of Physical Education, Annamalai University,
Annamalai Nagar, Tamil Nadu, India.

Abstract Artificial Intelligence (AI) has emerged as a transformative technology in modern sports by providing advanced solutions for performance analysis, athlete monitoring, and talent identification. Unlike traditional evaluation methods that rely mainly on coaches' observations, physical assessments, and statistical analysis, AI-based systems enable accurate, real-time, and data-driven decision-making through machine learning, deep learning, computer vision, and predictive analytics. AI technologies analyse large volumes of athlete data collected from wearable sensors, video recordings, GPS devices, and biometric monitoring systems to enhance performance, monitor workload, and reduce injury risks. In sports performance analysis, AI supports tactical evaluation, movement analysis, and personalized training, while in talent identification it evaluates physical abilities, technical skills, psychological factors, and performance patterns to predict future athletic potential. AI applications are widely used in football, cricket, basketball, athletics, swimming, tennis, and badminton to improve strategy development and competitive advantage. Although AI offers significant benefits, challenges such as data privacy, algorithmic bias, high implementation costs, and ethical issues must be addressed. The integration of AI with sports science is expected to create smarter training environments, enhance athlete development, and transform the future of competitive sports.

Keywords: Artificial Intelligence, Sports Performance Analysis, Talent Identification, Machine Learning, Sports Analytics.

The Impact of Fintech and Digital Financial Services on Financial Inclusion in India
Mr. Manikandan S.¹, Dr. P. Sivasakkarvarthi²

¹Research Scholar, SRM Institute of Science and Technology, Chennai, Tamil Nadu,
India.

²Research Supervisor, SRM Institute of Science and Technology, Chennai, Tamil Nadu,
India.

Abstract This study examines the contribution of financial technology (Fin-Tech) and digital financial services to advancing financial inclusion in India. The authors highlight that the widespread adoption of digital banking, mobile payment systems, and government-backed financial initiatives has significantly expanded access to formal financial services, particularly among underserved and previously unbanked populations. The study suggests that FinTech has transformed the financial sector by reducing barriers to financial access and promoting inclusive economic participation. The study concludes that Fin-Tech has emerged as a key enabler of financial inclusion by delivering accessible, affordable, and efficient financial services. It identifies user trust, perceived ease of use, social influence, and behavioural intention as critical factors influencing the adoption of digital financial services. The authors recommend that policymakers continue investing in digital infrastructure, encourage FinTech innovation, and formulate supportive regulatory frameworks to extend financial services to rural and economically disadvantaged communities, thereby promoting sustainable and inclusive economic development.

AI-ENABLED LEARNING AND PEDAGOGY: TRANSFORMING TEACHING, LEARNING, AND ASSESSMENT IN THE DIGITAL AGE

Mrs. R. Gokila¹, Dr. S. Bastin Britto²

¹Head & Assistant Professor, Aditya Institute of Management, Science & Research, Puducherry, India.

²Dean of Sciences & Associate Professor, Department of Computer Science, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence (AI) is transforming education by enabling personalized learning, adaptive instruction, intelligent tutoring systems, and data-driven assessment. AI-powered educational technologies provide learners with customized learning experiences while supporting educators in lesson planning, grading, and instructional decision-making. This paper examines the role of AI in reshaping teaching, learning, and assessment through AI-enabled pedagogy. It explores major AI applications, including personalized learning platforms, learning analytics, intelligent tutoring systems, automated feedback mechanisms, and AI-assisted classroom management. The study also discusses the benefits of AI such as enhanced student engagement, individualized instruction, improved accessibility, and administrative efficiency. At the same time, it addresses critical challenges including data privacy, algorithmic bias, digital inequality, academic integrity, and the changing role of teachers. Based on current literature, the paper proposes a balanced pedagogical framework in which AI complements rather than replaces human educators. Responsible AI implementation requires ethical governance, teacher preparedness, transparency, and continuous evaluation. The paper concludes that AI has significant potential to improve educational quality when integrated thoughtfully with sound pedagogical practices. Future developments in generative AI, immersive learning environments, and predictive learning analytics are expected to further transform education while emphasizing the importance of human-centered learning.

Keywords: Artificial Intelligence, AI in Education, Personalized Learning, Adaptive Learning, Digital Pedagogy, Learning Analytics, Intelligent Tutoring Systems, Educational Technology

WASTE MANAGEMENT AND RESOURCE EFFICIENCY: TURNING WASTE STREAMS INTO VALUE STREAMS

Mr. Idayathulla R.

Assistant Professor, Department of Computer Applications, Christ Arts and Science College,
Puducherry, India.

Abstract Waste management has usually been understood as the process of collecting trash and disposing it, which often meant either burying it in a landfill or burning it. Today, this practice might prove to be inefficient due to the fact that cities and rubbish dumps are running out of room, and new dumps get opened slower than the old ones are filled. In contrast, resource efficiency aims to understand whether it is possible to recycle, reuse or otherwise use the materials collected before they actually get disposed of. The present research paper will focus on waste management in conjunction with resource efficiency, treating the two subjects not as separate problems. The paper mostly relies on the reports provided by environmental organizations, city municipalities and print media covering the issue of waste disposal, including domestic, industrial and electronic waste. As a result, it becomes clear that using source segregation, waste recovery plants, composting and producer responsibility schemes contributes considerably to the reduction of waste being dumped into a landfill, and that the abovementioned methods function more effectively when combined instead of being used individually. According to the piece, the essence of waste may be turned from liability to resource. Thus, the importance of the things that governments are investing in creating the infrastructure for collection, industries are implementing their designs for recovery in mind, and households are getting used to sorting their waste. The united effort is decreasing damage to the environment and in the meantime contributing to cost-saving from the production of the waste that could be disposed of otherwise.

Keywords: Waste Management, Resource Efficiency, Waste Hierarchy, Recycling, Material Recovery, Composting, Extended Producer Responsibility, Waste-to-Energy, Circular Economy, Landfill Diversion.

ARTIFICIAL INTELLIGENCE IN HEALTHCARE AND MEDICAL DIAGNOSTICS: OPPORTUNITIES, APPLICATIONS, AND CHALLENGES

Dr. M. Chandrakala

Head and Assistant Professor, Department of Computer Applications, Idhaya College of Arts and Science for Women, Puducherry, India.

Abstract Artificial intelligence (AI) is progressively being incorporated into clinical procedures and altering the manner in which illnesses are recognized and treated. This paper will investigate the position of the AI systems, specifically machine learning and deep learning models in the contemporary field of medicine. It will analyze the presently used applications in radiology, oncology, cardiology, ophthalmology, and dermatology and compare the precision of AI-assisted methods with the traditional clinical evaluation in various types of diseases. It will also consider the major challenges of implementation such as data privacy issues, algorithmic bias, interpretability, and necessity of regulation. The analysis shows that AI systems can achieve the same level of accuracy as the specialists or even exceed it in the context of clearly defined diagnosis. However, in order to use AI systems in practice, it will need the validation, confidence of the medical practitioners, and integration into the current healthcare system.

Keywords Artificial Intelligence, Medical Diagnostics, Machine Learning, Deep Learning, Healthcare Technology, Clinical Decision Support, Radiology, Predictive Analytics

INTEGRATING TURING MACHINE SYMBOLIC RULES WITH HIGH-SIGNAL TF-IDF FEATURES FOR MULTI-CLASS SENTIMENT CLASSIFICATION USING COMPARATIVE NEURAL NETWORKS

Dr. S. Bastin Britto¹, Mr. P. Dinadayalan², Dr. N. Gnanambigai³, Mrs. S. Savitha⁴, Mr. A. Surendiran⁵

¹Dean of Sciences & Associate Professor, Department of Computer Science, Christ Arts and Science College, Puducherry, India.

²Department of Computer Science, Kanchi Mamunivar Government Institute for Postgraduate Studies and Research, Puducherry, India.

³Head of the Department, Department of Computer Science, Rajiv Gandhi Arts and Science College, Puducherry, India.

⁴Assistant Professor, Department of Computer Science, Saradha Gangadharan College, Puducherry, India.

⁵Librarian, Christ Arts and Science College, Puducherry, India.

Natural Language Processing (NLP) has achieved significant progress through deep learning techniques; however, existing neural models often suffer from limited interpretability, high computational complexity, and sensitivity to syntactic variations. Conversely, symbolic computing methods provide deterministic reasoning but lack the flexibility required to capture the semantic diversity of natural language. To address these limitations, this paper proposes a hybrid neural-symbolic framework that integrates Turing Machine (TM)-based symbolic rules with statistical feature extraction and deep learning architectures for multi-class sentiment classification. The proposed methodology begins by mapping sentiment labels into mutually exclusive class indices, followed by comprehensive text preprocessing and Term Frequency-Inverse Document Frequency (TF-IDF) feature extraction to obtain informative textual representations. A novel deterministic Turing Machine abstraction is then employed to generate symbolic transition vectors, which are fused with TF-IDF features to enhance semantic representation and improve model interpretability. The resulting hybrid feature set is evaluated using Backpropagation Neural Network (BPNN), Convolutional Neural Network (CNN), and Long Short-Term Memory (LSTM) models. Experimental results demonstrate that the LSTM architecture achieves the highest classification accuracy of **94.02%**, followed by CNN with **93.35%** and BPNN with **92.40%**. The proposed framework effectively bridges symbolic reasoning and neural learning, providing an interpretable, scalable, and accurate solution for advanced sentiment analysis tasks in NLP.

Keyword: Turing Machine (TM), Term Frequency-Inverse Document Frequency (TF-IDF), Back propagation Neural Network (BPNN)

PUBLIC POLICY FOR SUSTAINABLE TECHNOLOGICAL DEVELOPMENT

Mr. Abdul Rahaman J.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Technological innovation is advancing at an unprecedented pace, reshaping economies, societies, and the natural environment. While emerging technologies such as artificial intelligence, renewable energy systems, biotechnology, and advanced manufacturing offer significant potential to address pressing global challenges, their unmanaged diffusion can also generate environmental degradation, social inequality, and long-term economic instability. Public policy plays a central role in steering technological development toward outcomes that are environmentally sound, socially equitable, and economically viable.

This research paper examines the role of public policy in fostering sustainable technological development. It explores how regulatory frameworks, innovation incentives, environmental standards, and international cooperation mechanisms shape the trajectory of technology adoption across sectors. The study adopts a qualitative and descriptive approach, drawing on information from academic journals, international policy reports, and publications from governmental and intergovernmental organizations. The findings indicate that effective sustainability-oriented policy requires a combination of regulatory instruments, market-based incentives, public investment in research and development, and inclusive governance structures that engage industry, civil society, and academia.

Keywords: Public Policy, Sustainable Development, Technological Innovation, Environmental Regulation, Green Technology, Innovation Governance.

AI IN HEALTHCARE AND MEDICAL DIAGNOSTIC

Ms. Abinaya A.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence (AI) is revolutionizing healthcare and medical diagnostics by enhancing the accuracy, speed, and efficiency of disease detection and clinical decisions. Artificial intelligence (AI) tools such as machine learning, deep learning, and natural language processing can analyse vast amounts of medical data, including electronic health records, laboratory reports, and medical images, to help healthcare professionals identify diseases at an early stage. AI-based diagnostic systems are used extensively in radiology, pathology, cardiology, oncology, and other medical specialities to assist in accurate diagnosis and personalized treatment planning. These technologies help to decrease human mistakes, boost workflow efficiency and improve patient outcomes, all while lowering healthcare costs. Healthcare providers can use predictive analytics in order to identify patients at risk of developing serious illnesses and take preventive measures. Remote patient monitoring and telemedicine are also made possible by AI, which helps improve access to quality healthcare, especially in rural and underserved areas. There are many benefits to implementing AI in healthcare, but there are also challenges like data privacy, cybersecurity, ethical issues, algorithm bias, and the need for high-quality medical datasets that must be addressed to ensure responsible use. The ongoing collaboration between health professionals, researchers and technology developers is essential to develop trustworthy and transparent artificial intelligence (AI) systems. To summarize, artificial intelligence can transform medical diagnostics by delivering faster, more accurate and data-driven healthcare solutions. As technology advances, AI will increasingly contribute to enhancing disease diagnosis, treatment planning, and overall patient care, supporting healthcare professionals in providing efficient and evidence-based medical services.

Keywords:

Artificial Intelligence (AI), Healthcare, Medical Diagnostics, Machine Learning, Deep Learning, Clinical Decision Support.

CYBERSECURITY, PRIVACY, AND DIGITAL RIGHTS

Mr. Abishek S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

As societies become increasingly dependent on digital infrastructure, the protection of information systems, personal data, and individual freedoms online has become a defining challenge of the twenty-first century. Cybersecurity threats such as data breaches, ransomware, and phishing attacks continue to grow in scale and sophistication, while the widespread collection and use of personal data by governments and private companies raise significant concerns about privacy and digital autonomy. At the same time, the expansion of digital surveillance and content regulation has intensified debate over the balance between security, commercial interests, and fundamental digital rights.

This research paper examines the interconnected issues of cybersecurity, privacy, and digital rights, exploring how technical vulnerabilities, regulatory frameworks, and ethical considerations shape the protection of individuals and institutions in digital environments. The study adopts a qualitative and descriptive approach, drawing on information from academic journals, government reports, and publications from international organizations and technology companies. The findings indicate that effective protection of digital rights requires a combination of technical safeguards, comprehensive legal frameworks, corporate accountability, and public awareness.

The paper concludes that cybersecurity and privacy cannot be treated as purely technical problems; they are deeply connected to questions of governance, ethics, and human rights. Governments, technology companies, and civil society must work together to build digital ecosystems that are secure, respect individual privacy, and uphold fundamental rights, while remaining adaptable to rapidly evolving technological and threat landscapes.

Keywords:

Cybersecurity, Data Privacy, Digital Rights, Data Protection, Surveillance, Information Security.

AI GOVERNANCE AND REGULATORY FRAMEWORK

Mr. Anbuselvan V.¹, Mr. Mohamed Riyas M.², Mr. Jeevan V.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

The rapid advancement and widespread deployment of artificial intelligence systems across industries has created an urgent need for governance structures that can manage associated risks while enabling continued innovation. AI governance encompasses the policies, standards, institutions, and oversight mechanisms that guide how AI systems are designed, deployed, and monitored. As AI capabilities expand into high-stakes domains such as healthcare, finance, criminal justice, and employment, concerns about transparency, accountability, bias, and safety have prompted governments and international bodies to develop regulatory frameworks aimed at ensuring responsible AI development.

This research paper examines the evolving landscape of AI governance and regulation, exploring how different jurisdictions approach risk classification, transparency requirements, accountability mechanisms, and international coordination. The study adopts a qualitative and descriptive approach, drawing on information from academic journals, government publications, and reports from international organizations and technology policy institutes. The findings indicate that effective AI governance requires a combination of risk-based regulation, technical standards, institutional oversight, and international cooperation to address the cross-border nature of AI development and deployment.

The paper concludes that AI governance is not a single regulatory solution but an evolving ecosystem of legal, technical, and institutional measures. Governments, industry, and civil society must collaborate to build governance frameworks that are adaptable to rapid technological change, while maintaining core commitments to safety, fairness, transparency, and human oversight throughout the AI lifecycle.

Keywords: Artificial Intelligence, AI Governance, Regulatory Framework, Algorithmic Accountability, AI Risk Management, AI Ethics.

GENERATIVE AI AND LARGE LANGUAGE MODELS

Mr. Aslam N.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Generative Artificial Intelligence (AI), and Large Language Models (LLMs) in particular, have rapidly transitioned from research curiosities into everyday tools used for writing, coding, research, and decision support. This paper reviews the technical foundations underlying modern LLMs, including the transformer architecture, self-attention mechanisms, and large-scale pretraining objectives, before examining how instruction tuning and reinforcement learning from human feedback shape model behaviour. The discussion covers the rapid growth in model scale over the past several years, common evaluation methodologies, and practical application domains such as content generation, software development, and education. The paper closes by considering persistent challenges, including hallucination, bias, computational cost, and the broader ethical and societal implications of deploying increasingly capable generative systems. The review is intended as an accessible entry point for readers seeking a structured overview of the field, its current state, and the questions that remain unresolved.

Keywords: Generative AI; Large Language Models; Transformer Architecture; Natural Language Processing; Machine Learning; Deep Learning.

LIFELONG LEARNING AND EMPLOYABILITY

Mr. Balaji M.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

The rapid pace of technological, economic, and organisational change has made a single phase of education insufficient to sustain a career. This paper examines lifelong learning as a continuous process of acquiring, updating, and applying knowledge and skills throughout an individual's working life, and its direct bearing on employability. Employability is treated here not as a fixed credential but as a dynamic capacity to obtain, retain, and progress in meaningful work as job requirements evolve.

Drawing on published research, labour-market reports, and institutional data, the study explores how continuous learning strengthens core employability skills such as digital literacy, critical thinking, communication, and adaptability. It also considers the barriers individuals and organisations face in embedding learning into everyday work, including time constraints, unequal access to training, and the cost of upskilling. The analysis finds that employees who engage in regular, structured learning are better positioned to move across roles and industries, while organisations that invest in workforce development see gains in retention and productivity.

The paper concludes that building an employable workforce for the future requires shared responsibility among individuals, employers, educational institutions, and policymakers. A coordinated approach to lifelong learning, one that is accessible, relevant, and continuously updated, is presented as central to sustaining employability in a labour market shaped by automation and rapid technological change.

Keywords: Lifelong Learning, Employability, Reskilling, Upskilling, Continuous Professional Development, Career Adaptability.

AI AND MACHINE LEARNING APPLICATION

Mr. Balavigneshwar B.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence (AI) and Machine Learning (ML) have turned out to be disruptive innovations, which continue to impact various fields. Artificial Intelligence is defined as the creation of intelligent machines that can complete tasks normally performed by humans. Machine Learning is about using computers' ability to process large amounts of information to make them able to work automatically. The application areas of these two technologies include healthcare, finance, education, transport, agriculture, retail, and cybersecurity. These innovations are applied to disease diagnostics, fraud prevention, personalized learning, autonomous vehicles, recommendations, and predictive maintenance. These innovations allow enterprises to increase productivity, lower costs, and make better decisions based on the available data. There are still many challenges, such as data protection, ethical issues, and the lack of specialists. With the further development of technologies, it can be said that artificial intelligence and machine learning will become more important components of innovations and economic success.

Keywords: Artificial Intelligence (AI), Machine Learning (ML), Deep Learning ,Neural Networks, Data Analytics ,Big Data

ENVIRONMENTAL SUSTAINABILITY AND GREEN TECHNOLOGIES

Mr. Bharanidharan T.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Environmental sustainability focuses on meeting today's human needs while protecting natural resources and ecosystems for future generations. Green technologies play a key role in reaching this goal by encouraging cleaner energy, efficient resource use, and less environmental pollution. Technologies like solar and wind energy, electric vehicles, energy-efficient buildings, water conservation systems, and improved recycling methods help cut greenhouse gas emissions and reduce waste. These innovations not only safeguard the environment but also bolster economic growth, promote public health, and improve energy security. Despite obstacles such as high costs and infrastructure needs, ongoing technological progress, supportive policies, and public awareness are leading to broader use. Embracing environmental sustainability and green technologies is vital for fighting climate change, preserving biodiversity, and ensuring a sustainable and resilient future for generations to come.

Keywords: Environmental Sustainability, Green Technologies, Renewable Energy, Clean Energy, Energy Efficiency, Sustainable Development.

FINTECH, DIGITAL PAYMENTS, AND FINANCIAL INCLUSION

Ms. Bhavana V.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Financial technology, commonly referred to as fintech, has fundamentally altered how individuals and businesses access, move, and manage money. This paper examines the growth of digital payment systems and their role in expanding financial inclusion, with particular attention to mobile wallets, peer-to-peer lending platforms, and digital-only banking services. Drawing on recent industry and development-bank data, the paper compares adoption rates and growth trends across global regions and evaluates the specific technologies driving this shift. It also considers the barriers that continue to limit fintech's reach, including infrastructure gaps, regulatory fragmentation, and cybersecurity risk. The analysis indicates that while digital payment adoption is accelerating fastest in regions with previously low banking penetration, sustained financial inclusion depends less on the technology itself and more on complementary factors such as digital literacy, network reliability, and consumer trust in non-traditional financial providers.

Keywords: Fintech, Digital Payments, Financial Inclusion, Mobile Wallets, Blockchain, Digital Banking.

SUSTAINABLE CONSUMPTION AND PRODUCTION

Mr. Bibin A.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Sustainable Consumption and Production, often shortened to SCP, is about doing more with less. It means making goods and delivering services in a way that uses fewer resources, causes less pollution, and leaves less waste behind, while still meeting the needs of people today and in the future. As populations grow and buying power rises across the world, the pressure on raw materials, energy, water and land keeps increasing. This has pushed governments, businesses and researchers to look more closely at how production and consumption can be redesigned rather than simply managed after the damage is done.

This research paper looks at Sustainable Consumption and Production from both sides of the supply chain, the way things are made and the way things are bought and used. It draws on reports and literature from international agencies, environmental research bodies and industry publications. The findings show that cleaner production methods, circular product design and more responsible buying habits all work together, and that none of them is enough on its own. The paper also finds that changing consumer behaviour is just as important as changing factory processes, since demand shapes what gets produced in the first place.

The paper argues that a real shift towards sustainable consumption and production needs governments, industries and everyday consumers pulling in the same direction. Policies that reward efficient and circular practices, businesses that redesign products and supply chains, and households that consume more mindfully all add up. If these efforts are joined together, it becomes possible to slow down resource depletion and environmental damage without asking people to give up a decent standard of living.

Keywords: Sustainable Consumption and Production (SCP), Circular Economy, Resource Efficiency, Responsible Consumption, Cleaner Production, Waste Reduction .

TOURISM, HOSPITALITY AND SERVICE INNOVATION

Ms. Chandrika B.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Tourism, hospitality and service innovation are tightly intertwined in today's global economy. The tourism industry is a major contributor to job creation, income generation and cultural exchange, and the hospitality sector provides services such as accommodation, food, transport and customer care to travellers. The pace of technological change is fast and consumer expectations are changing, so there is a greater need for innovative service practices.

Digital booking platforms, mobile applications, contactless payments, artificial intelligence and personalised customer experiences have transformed the way tourism and hospitality organisations work. Service innovation is the development of new methods, technologies and service models that increase productivity, customer satisfaction and competitiveness. The paper discusses the contribution of innovation to improve the tourist experience and the overall performance of the hospitality businesses in a dynamic market environment.

The paper also discusses the role of service innovation in sustainable tourism development and long-term business growth. As they try to meet customer expectations and fulfil environmental responsibilities, hospitality organizations are increasingly embracing eco-friendly practices, smart technologies and data-driven decision making. Innovative services such as digital concierge systems, self-check-in facilities, virtual tours and customized travel packages help organizations create memorable experiences and improve operational performance. Successful innovation is a function of employee training, effective leadership, and the ability to continuously adapt to changes in the market, the study finds.

Keywords: Tourism, hospitality, service innovation, digital transformation, customer experience, sustainability.

AI-ENABLED LEARNING AND PEDAGOGY

Mr. Chandru S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence is steadily reshaping how learners are taught and how educators design instruction. This paper examines the emergence of AI-enabled learning and pedagogy, focusing on adaptive learning platforms, intelligent tutoring systems, automated assessment tools, and AI-driven learning analytics. It considers how these technologies influence student engagement, teacher workload, and the overall design of curricula across school and higher-education settings.

Drawing on secondary sources including academic literature, institutional reports, and industry publications, the study explores how AI is used to personalize instruction, provide real-time feedback, and support data-informed decision-making by educators. The findings indicate that AI is not replacing teachers but reshaping their role, shifting emphasis toward facilitation, mentorship, and higher-order skill development, while automating repetitive administrative and assessment tasks.

The paper also identifies key challenges accompanying this shift, including algorithmic bias, unequal access to digital infrastructure, data privacy concerns, and the risk of over-reliance on automated systems. It concludes that realizing the benefits of AI in education requires deliberate investment in teacher training, ethical governance frameworks, and equitable access, so that pedagogy evolves in a way that keeps human judgment and student wellbeing at its center.

Keywords: Artificial Intelligence (AI), AI-Enabled Learning, Pedagogy, Adaptive Learning, Intelligent Tutoring Systems, Learning Analytics.

WASTE MANAGEMENT AND RESOURCE EFFICIENCY

Mr. Dashwinkrishnan M.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Waste management has traditionally meant collecting rubbish and getting rid of it, usually by burying it in a landfill or burning it. That approach is running out of room, quite literally, as cities grow and landfills fill up faster than new ones can be opened. Resource efficiency asks a different question, instead of just disposing of waste safely, can materials be recovered, reused or turned back into something useful before they are thrown away at all.

This research paper looks at waste management alongside resource efficiency, treating the two as connected rather than separate concerns. It draws on literature from environmental agencies, municipal waste reports and industry publications covering household, industrial and electronic waste. The findings show that segregation at the source, material recovery facilities, composting and extended producer responsibility schemes all reduce what ends up in landfill, and that these measures work best when they are combined rather than used in isolation.

The paper argues that treating waste as a resource rather than a burden changes the economics of the whole system. Governments that invest in collection infrastructure, industries that design for recovery, and households that sort their waste properly all contribute to a system where less is wasted and more is recovered. Done together, this reduces environmental damage while also creating economic value from materials that would otherwise be lost.

Keywords: Waste Management, Resource Efficiency, Waste Hierarchy, Recycling, Material Recovery, Composting.

RENEWABLE ENERGY SYSTEMS AND SMART GRIDS

Mr. Devaraj V.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Power grids were built around a simple assumption: a handful of large plants generate electricity, and it flows one direction, out to homes and businesses. That assumption is breaking down. Solar panels on rooftops, wind farms feeding into rural substations, and batteries sitting in garages all push power back into a system that was never really designed to receive it. Smart grids are the industry's answer to this problem, using sensors, two-way communication, and software to let the grid sense what is happening in real time and respond, rather than just push power out and hope for the best.

This paper looks at how renewable energy sources and smart grid technology fit together, and why one is increasingly hard to scale without the other. It draws on reports and studies from energy agencies, utility research groups, and technology firms working on grid modernization, and examines solar, wind, hydro, and storage as the main renewable inputs being managed through smart grid infrastructure. The paper also looks at what is driving utilities to invest in these systems, and where the rollout keeps running into trouble, cost of retrofitting old infrastructure, cybersecurity of a more connected grid, and the sheer unpredictability of wind and solar output being the most commonly cited issues.

The paper concludes that smart grids are not simply a nice-to-have layered on top of renewable energy, they are increasingly a precondition for renewable energy to work at scale, since variable generation needs a grid that can balance supply and demand far more actively than older infrastructure allows. Getting there will need continued investment, clearer regulation, and grids that can talk to millions of small generation points instead of a few large ones.

Keywords: Renewable Energy, Smart Grids, Solar Power, Wind Power, Energy Storage, Grid Modernization..

WASTE RESOURCE AND MANAGEMENT EFFICIENCY

Ms. Dharshini V.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Efficient waste resource management has become a critical component of sustainable development, as growing consumption and urbanisation continue to increase the volume and complexity of waste streams worldwide. This paper reviews the waste management hierarchy, which prioritises prevention, reduction, and reuse ahead of recycling, recovery, and disposal, as a guiding framework for improving resource efficiency. The discussion examines key performance indicators used to evaluate waste management efficiency, including diversion rate, contamination rate, and resource recovery rate, and presents illustrative survey data comparing diversion and landfill outcomes across major waste categories. The paper further considers the technological, behavioural, and policy factors that influence how effectively waste is managed, including the role of source separation, extended producer responsibility, and material recovery infrastructure. The paper concludes that meaningful gains in waste management efficiency require coordinated action across households, industry, and regulatory bodies, supported by consistent measurement and reporting practices.

Keywords: Waste Management; Resource Recovery; Recycling; Waste Diversion; Circular Resource Use; Sustainability.

COLLABORATIVE MODELS FOR SOCIETAL IMPACT

Mr. Dinesh M.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Big social problems, homelessness, education gaps, public health crises, rarely get solved by one organization working alone. A city government can pass policy but often lacks the on-the-ground reach of a local nonprofit. A company can fund a program but may not understand community needs the way a grassroots group does. Over the past couple of decades, this has pushed governments, businesses, nonprofits, and community groups toward collaborative models, structured ways of working together toward a shared social outcome instead of running parallel, disconnected efforts.

This paper looks at how these collaborative models are actually built and run, drawing on published research, case studies, and reports from organizations that study cross-sector partnerships and social change. It examines a handful of common collaboration formats, including collective impact initiatives, public-private partnerships, and multi-stakeholder coalitions, and looks at what tends to make them work as well as what commonly causes them to stall or fall apart. Shared measurement, a backbone organization to coordinate the work, and genuinely aligned incentives across partners come up again and again as conditions for success, while unclear roles, mismatched timelines, and unequal power between partners come up just as often as reasons collaborations struggle.

The paper argues that collaboration for social impact is not simply a matter of good intentions or shared values, it requires real structure: someone has to coordinate the work, track whether it is working, and manage the inevitable friction between partners who have different mandates and different definitions of success. The paper closes by looking at what this means for organizations considering a collaborative approach and what conditions seem to make these efforts more likely to last.

Keywords: Collaborative Models, Collective Impact, Cross-Sector Partnerships, Public-Private Partnerships, Social Innovation, Community Engagement.

RENEWABLE ENERGY SYSTEMS AND GUIDES

Ms. Gomathy K.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Renewable energy systems have become central to global efforts to decarbonise electricity generation while maintaining reliable and affordable energy supply. This paper presents a practical framework for understanding and selecting among the major renewable energy technologies, including solar photovoltaic, onshore and offshore wind, hydropower, and bioenergy. The discussion examines relative cost trends and operating characteristics of each technology, before turning to deployment scale considerations spanning residential, commercial, industrial, and utility contexts. An illustrative breakdown of the global renewable electricity generation mix is presented to contextualise the relative contribution of each source. The paper also considers integration challenges, including intermittency management and grid readiness, and highlights the role of storage and policy support in enabling continued growth. This review is intended as a practical guide for readers seeking to understand how to match renewable energy technology choices to specific site and scale requirements.

Keywords: Renewable Energy; Solar Photovoltaic; Wind Energy; Hydropower; Bioenergy; Energy Storage.

INNOVATION ECOSYSTEMS AND KNOWLEDGE TRANSFER

Mr. Goutham M.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Innovation rarely happens inside a single organisation working alone. It usually grows out of a web of relationships between universities, startups, established industry, government bodies and investors, each contributing something the others do not have. This web is often described as an innovation ecosystem, and how well knowledge moves through it, from a research lab to a startup, or from one company to another, has a big say in how quickly good ideas actually reach the market. This research paper looks at innovation ecosystems and the knowledge transfer that runs through them, drawing on literature from innovation agencies, university technology transfer offices and industry reports. The findings show that ecosystems work best when there are clear pathways for knowledge to move between actors, such as licensing arrangements, joint research, spin-off companies and shared innovation hubs, and that ecosystems missing these pathways tend to leave good research stuck inside the lab.

The paper argues that building a strong innovation ecosystem is not just about funding research or supporting startups in isolation, it is about deliberately connecting the two, along with government policy, industry partners and investors, so that knowledge keeps moving instead of sitting still. Where this connection is made well, ideas move from concept to market faster, and the economic benefit of research spreads well beyond the institution that produced it.

Keywords: Innovation Ecosystems, Knowledge Transfer, Technology Transfer, Triple Helix Model, University Industry Collaboration, Startups.

ARTIFICIAL INTELLIGENCE FOR DISASTER RISK MANAGEMENT AND RESILIENCE

Mr. Hariharan A.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Natural and human-induced disasters are increasing in frequency and severity, placing growing pressure on governments, humanitarian organisations, and communities to strengthen disaster risk management and resilience. Artificial intelligence (AI) has emerged as a powerful tool across the full disaster management cycle, from predictive risk modelling and early warning to real-time response coordination and post-disaster recovery analysis. This paper examines the conceptual foundations of AI-enabled disaster risk management, reviews the academic and practitioner literature on its applications and limitations, and synthesises the key factors that determine effective adoption. Using a structured literature-based analysis, the paper identifies eight core applications — including predictive modelling, satellite-based remote sensing, and AI-driven resource allocation — and evaluates their impact on risk reduction and resilience outcomes. The analysis extends to hazard-specific applications across flooding, earthquakes, wildfires, hurricanes, drought, and pandemics. The findings suggest that AI can materially improve forecasting accuracy, response speed, and recovery planning, but its effectiveness depends on data quality, infrastructure, and careful attention to equity and ethical risk. The paper concludes with implications for practitioners and policymakers and suggests directions for future research.

Keywords: Artificial intelligence; disaster risk management; resilience; early warning systems; predictive analytics; remote sensing.

TRANSDISCIPLINARY RESEARCH METHODOLOGIES

Mr. Ilamaram L.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Some of the hardest problems researchers work on today, climate adaptation, public health inequities, sustainable food systems, don't sit neatly inside one academic field. A climate scientist can model rainfall patterns, but understanding why a farming community adapts or doesn't adapt to those changes needs economics, sociology, and often the community's own knowledge as well. Transdisciplinary research is an attempt to work across these boundaries properly, not just borrowing a method from another field, but bringing researchers from different disciplines together with people outside academia, policymakers, practitioners, affected communities, to define the problem and build the answer jointly.

This paper looks at what transdisciplinary research methodology actually involves in practice, and how it differs from multidisciplinary or interdisciplinary approaches that are more commonly discussed. Drawing on published research and reports from institutions that study and fund transdisciplinary work, the paper examines core methodological elements such as co-design of research questions, joint knowledge production, and integration of academic and non-academic expertise. It also looks at what tends to support this kind of work and what tends to make it difficult, including institutional incentives that still reward single-discipline output, the time cost of building shared language across fields, and the challenge of evaluating research that does not fit neatly into one field's quality standards.

The paper argues that transdisciplinary methodology is less a fixed toolkit and more an ongoing practice of negotiation between different ways of knowing. Where it succeeds, it tends to produce research that is more usable by the people facing the problem in the first place, not just more academically comprehensive. The paper closes with a look at what needs to change, in funding structures, academic incentives, and training, for transdisciplinary research to become easier to do well rather than remaining the exception.

Keywords: Transdisciplinary Research, Interdisciplinarity, Co-Production of Knowledge, Research Methodology, Knowledge Integration, Stakeholder Engagement.

CYBERSECURITY, PRIVACY AND DIGITAL RIGHTS

Ms. Irudhaya Mary A.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Cybersecurity, privacy and digital rights have become the pillars that hold up the modern digital society. As more of daily life moves through the internet, cloud computing, artificial intelligence and other smart technologies, individuals and organisations are exposed to a growing list of risks: cyberattacks, data breaches, identity theft and online fraud among them. Cybersecurity, at its core, is the practice of protecting digital systems, networks and sensitive information from unauthorised access and malicious activity. Privacy is a related but distinct idea, concerned with whether personal information is collected, stored and processed responsibly and with proper regard for consent. Digital rights extend this further, covering the freedoms people are entitled to in online spaces, including freedom of expression, access to information, data protection and online security. Together, these three ideas form the backbone of a digital environment that is safe, reliable and reasonably inclusive for users everywhere. This paper looks at how cybersecurity, privacy and digital rights depend on one another, and at how that interdependence plays out against real, current digital challenges. It examines how threats such as ransomware, phishing, malware and social engineering affect individuals, businesses and governments, and argues that robust cybersecurity policy, encryption, secure authentication and public awareness are all needed to keep digital risk manageable. Getting the balance right between technological innovation and the protection of individual rights is not straightforward, but it becomes more achievable when governments, technology companies and users work together to reinforce digital resilience and build genuinely safe online spaces.

Keywords: Cybersecurity and Privacy, Information Security, Cyber Attacks, Data Breach, Encryption, Authentication..

ETHICAL IMPLICATIONS OF ARTIFICIAL INTELLIGENCE

Mr. Jayasurya E.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence is no longer a distant idea confined to research labs; it now sits inside hiring systems, lending decisions, medical diagnostics, policing tools and everyday consumer apps. As these systems take on judgments that used to belong to people, they raise questions that go beyond technical performance and enter the territory of right and wrong. This paper looks closely at the ethical implications of Artificial Intelligence, focusing on the recurring concerns of bias and fairness, privacy, transparency, accountability and the gradual narrowing of human autonomy in automated decisions.

The study draws on published guidance from international bodies, academic commentary and industry reports to build a picture of where AI ethics stands today and where the pressure points are. It finds that most of the harm associated with AI does not come from AI being malicious, but from systems trained on unbalanced data, deployed without adequate oversight, and used in settings where the people affected have little ability to question or appeal a decision. Bias embedded in historical data quietly reproduces old patterns of discrimination, opaque models make it hard for anyone, including regulators, to explain why a particular outcome occurred, and the diffusion of responsibility across developers, deployers and users makes accountability difficult to pin down.

The paper argues that closing these gaps requires more than good intentions. It calls for clear governance structures, enforceable standards for transparency and explainability, meaningful human oversight of consequential decisions, and stronger protections around personal data. When these safeguards are missing, the benefits of AI risk being outweighed by the harm done to the people least able to protect themselves. Ethical AI, the paper concludes, is not a fixed checklist but an ongoing responsibility shared by developers, organisations, regulators and the public.

Keywords: Artificial Intelligence (AI), AI Ethics, Bias and Fairness, Data Privacy, Transparency, Accountability.

CONVERGENCE OF SCIENCE, BUSINESS, AND HUMANITIES

Mr. Jeveeth T.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Contemporary problems such as climate change, public health crises, and rapid digital transformation rarely respect disciplinary boundaries, yet higher education and professional training remain organised largely around single fields of study. This paper examines the convergence of science, business, and humanities as an emerging model for producing knowledge and solutions that are technically sound, economically viable, and ethically and culturally informed. Drawing on recent interdisciplinary and convergence-research literature, the study outlines the distinct contributions and limitations of each domain, presents illustrative case areas in which the three fields intersect, and proposes a composite framework for evaluating the depth of disciplinary integration. Findings suggest that convergence is most effective when institutional structures, funding models, and training pathways are deliberately redesigned to support cross-disciplinary collaboration rather than treating it as an incidental by-product of existing programmes. The paper concludes by identifying structural barriers to convergence and by recommending curricular and organisational reforms that could help universities and industry better prepare graduates and researchers for transdisciplinary work.

Keywords: Interdisciplinarity; convergence research; science and society; business ethics; digital humanities; transdisciplinary education..

AI IN LANGUAGE, LITERATURE, AND DIGITAL COMMUNICATION

Mr. Kamesh B.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial intelligence has moved from a peripheral tool to a central mediator of how language is produced, studied, and circulated. This paper examines the role of AI across three interconnected domains: language, where large language models now perform translation, grammar correction, and speech recognition at scale; literature, where computational methods support stylometric analysis, authorship attribution, and machine-assisted creative writing; and digital communication, where AI drives chatbots, sentiment analysis, content moderation, and personalised information feeds.

Synthesising recent scholarship from 2023 to 2026, the paper argues that AI's linguistic competence is uneven across these domains: it performs strongly on tasks with clear structural regularities, such as translation and sentiment classification, but continues to struggle with irony, ambiguity, and culturally embedded meaning, which remain central to literary and communicative nuance. The paper also highlights a persistent structural bias in AI language systems, which are disproportionately trained on a small number of dominant languages, raising concerns about linguistic inequality in global digital communication. The paper concludes that realising the benefits of AI in language and literary contexts requires deliberate attention to multilingual data representation, transparent model design, and continued human oversight of interpretive and creative judgement.

Keywords: Natural language processing; computational linguistics; digital humanities; machine translation; algorithmic writing; social media communication .

DIGITAL HUMANITIES AND COMPUTATION SOCIAL SCIENCE

Ms. Keerthika T.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Digital Humanities (DH) and Computational Social Science (CSS) are some of the most quickly growing interdisciplinary studies where computational technologies are used in the humanities and social sciences in order to answer research questions. In Digital Humanities, various digital technologies like text mining, data visualization, GIS technologies, and artificial intelligence are applied in the preservation, analysis, and interpretation of cultural, historical, and literary materials. In Computational Social Science, on the contrary, big data, machine learning, network analysis, and computational modelling techniques are utilized to study social interaction and behavior of people through digital databases.

Such an interplay between these two disciplines has revolutionized research practices by making it possible for researchers to analyze enormous amounts of data using more accurate and efficient ways than ever before. It becomes possible to reveal hidden patterns in data, predict social phenomena, and produce insights that can be used to make sound decisions in spheres such as education, public policy, healthcare, governance, and cultural heritage preservation. Moreover, digital tools have made collaboration between researchers from different academic fields more convenient.

However, there are still many problems that need to be addressed including data privacy, ethics of artificial intelligence, algorithmic bias, digital divide, and reproducibility of results. It is crucial to solve these problems in order to use computation technologies responsibly and fairly.

The current paper presents an examination of the ideas, approaches, uses, advantages, and obstacles in relation to the disciplines of Digital Humanities and Computational Social Science. It will also demonstrate some tendencies in this sphere and possible ways of development, with a special emphasis on artificial intelligence and big data.

Keywords: Digital Humanities, Computational Social Sciences, Data Analysis, Digital Research, Big Data, Humanities Computing.

AI AND MACHINE LEARNING APPLICATION

Ms. Lakshana P.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

AI is the ability of machines to perform tasks that would normally require human intelligence, while ML is a subset of AI that allows computers to learn from data and improve their performance without being explicitly programmed. These technologies are widely used in many sectors such as healthcare, education, finance, agriculture, transportation, and entertainment. AI and ML are used to automate repetitive tasks, improve decision-making, improve customer experience and increase productivity. They help diagnose diseases and analyze medical images in healthcare. In finance they are used for fraud detection and risk assessment. Educational platforms use AI to deliver personalized learning experiences. Typical uses include self-driving cars, virtual assistants, recommendation engines and smart security systems. The ongoing advances in AI and ML are opening up new avenues for innovation and economic growth. These technologies can solve complex problems and enhance the quality of life despite the data privacy, security, and ethical challenges. This paper discusses the main applications, benefits and future prospects of AI and In summary, the research shows that AI and Machine Learning are becoming critical technologies for innovation and economic growth. Their successful use can improve the quality of services and create new opportunities for people, businesses and society. Artificial Intelligence and Machine Learning are also transforming the face of agriculture by helping farmers increase crop production and reduce losses. AI-based systems use soil quality, weather conditions, water availability and crop health to provide useful recommendations. Machine Learning models help to predict diseases in crops and pest attacks before they become a serious problem.

Keywords: Artificial Intelligence (AI), Machine Learning (ML), Deep Learning, Neural Networks, Data Analytics, Automation .

SMART AGRICULTURE AND AGRI-TECH INNOVATIONS

Mr. Logeshwaran D.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Farming has always depended on reading conditions correctly - when to plant, how much to water, when a pest problem is starting. Smart agriculture takes that same task and adds instruments to it: soil sensors, drones, satellite imagery, automated irrigation and predictive software that turn scattered field observations into data a farmer can act on before a problem becomes a loss. This paper looks at how these agri-tech innovations are being adopted, what benefits they are producing, and what is standing in the way of wider use, particularly among small and mid-sized farms.

The study draws on agricultural research, industry reports and case material from precision farming programmes across different regions to examine the main categories of smart agriculture technology: precision irrigation and soil monitoring, drone and satellite crop surveillance, automated machinery, and predictive analytics for yield and pest management. The findings show consistent gains in water efficiency, input use and yield stability wherever these tools have been properly implemented, but adoption remains uneven, held back by equipment cost, patchy rural connectivity, and a shortage of the technical know-how needed to operate and interpret these systems.

The paper argues that the technology itself is largely proven; the harder problem is making it accessible to the farmers who would benefit from it most. It calls for shared infrastructure such as cooperative equipment access, farmer training programmes, and policy support aimed at closing the gap between well-resourced commercial farms and smaller operations. Smart agriculture, the paper concludes, works best not as a replacement for farming knowledge but as a way of extending it - giving farmers better information earlier, without taking the decision out of their hands.

Keywords: Smart Agriculture, Agri-Tech, Precision Farming, Soil Sensors, Drone Monitoring, Automated Irrigation .

ENVIRONMENTAL SUSTAINABILITY AND GREEN TECHNOLOGIES

Mr. Madanrajan S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Accelerating climate change and resource degradation have pushed green technologies from a niche research interest to a central pillar of environmental policy and industrial strategy. This paper reviews recent scholarship on environmental sustainability and green technologies across four domains: energy, materials and construction, water and waste management, and transport. Drawing on peer-reviewed literature published between 2020 and 2026, the paper synthesises evidence on renewable energy expansion, low-carbon materials such as green steel, circular water and waste systems, and sustainable transport technologies including electric vehicles and hybrid transit. The review finds consistent evidence that green technologies reduce emissions and resource consumption at the point of application, but that adoption remains constrained by high upfront capital costs, fragmented regulation, and supply-chain limitations for critical inputs such as battery materials. The paper also highlights the growing role of circular-economy approaches, which recover and reuse materials rather than treating waste as a terminal output. It concludes that translating technical potential into measurable environmental gains will require coordinated policy support, equitable access to green technology across regions, and continued investment in emerging solutions such as carbon capture and nextgeneration renewable systems.

Keywords: Green technology; renewable energy; circular economy; sustainable transport; climate change mitigation; environmental policy.

HR ANALYTICS AND TALENT MANAGEMENT

Mr. Manikandan V.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Human resource management has shifted from administrative record-keeping toward a data-driven discipline in which workforce decisions are increasingly informed by statistical and predictive analysis. This paper reviews recent industry and academic literature on HR analytics and talent management, covering applications in recruitment and selection, retention and engagement, performance management, and workforce planning. Drawing on 2025-2026 surveys and reviews from peopleanalytics research bodies, the paper finds that organisations with mature analytics programmes report faster decision-making, stronger retention outcomes, and measurably higher returns on HR investment than organisations relying primarily on descriptive reporting. However, the literature also shows that adoption is uneven: most organisations use people analytics most heavily for retention and turnover, while capabilities in workforce planning and diversity, equity, and inclusion tracking lag behind. The paper identifies governance, data integration, and analytics fluency among managers as the factors most consistently associated with higher analytics maturity. It concludes that the value of HR analytics depends less on the sophistication of the underlying algorithms than on whether organisations build the governance structures and human capability needed to translate insight into consistent action.

Keywords: People analytics; talent management; predictive HR analytics; employee retention; workforce planning; data-driven decision making

AI IN HEALTHCARE AND MEDICAL DIAGNOSTICS

Mr. Manoj S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Medicine has always relied on pattern recognition - a radiologist reading a scan, a clinician weighing symptoms against experience. Artificial Intelligence is now being layered onto this process, trained on large volumes of medical images, patient records and clinical outcomes to flag patterns that support, and in some cases outperform, human judgment on narrow diagnostic tasks. This paper examines how AI is being used in healthcare and medical diagnostics, looking at where the evidence for benefit is strongest, where it is weaker, and what stands between a promising research result and a tool that clinicians can safely rely on.

The paper argues that the technology's clinical value depends less on raw model accuracy and more on how well it is integrated into a workflow that keeps a qualified clinician in charge of the final decision. It calls for continued investment in diverse, representative training data, clearer regulatory pathways for clinical AI tools, and ongoing clinician training so that these systems are understood rather than simply trusted. Used this way, the paper concludes, AI has genuine potential to catch what a tired eye might miss, without displacing the judgment that medicine still depends on.

Keywords: Artificial Intelligence (AI), Healthcare, Medical Diagnostics, Medical Imaging, Clinical Decision Support, Predictive Analytics.

CYBERSECURITY, PRIVACY, AND DIGITAL RIGHTS

Mr. Marie Arulnathan G.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

As digital services become embedded in nearly every aspect of daily life, the protection of personal data and the preservation of individual rights online have become central concerns for organisations, governments, and citizens alike. This paper examines the relationship between cybersecurity practice, privacy protection, and digital rights, arguing that these three domains are deeply interdependent rather than separate concerns. Drawing on a structured review of academic and policy literature, the paper identifies eight recurring factors — including data minimisation, encryption, transparency, and algorithmic accountability — that shape how effectively organisations protect both systems and the people who use them. The analysis extends to sector-specific applications across healthcare, finance, government, social media, the Internet of Things, and education, illustrating how digital rights challenges manifest differently depending on context. The paper concludes that meaningful protection of digital rights requires technical security measures to be paired with legal accountability, transparency, and public digital literacy, and it offers implications for practitioners, regulators, and future researchers.

Keywords: Cybersecurity; data privacy; digital rights; data protection; surveillance; encryption .

MARKETING ANALYTICS AND CONSUMER BEHAVIOR IN THE AI ERA

Mr. Mohammed Riyaz H.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Marketing has always tried to understand what makes a customer choose one product over another, but the tools for answering that question have changed a great deal. Artificial Intelligence now sits behind product recommendations, personalised advertising, dynamic pricing and customer segmentation, drawing on browsing history, purchase patterns and behavioural signals at a scale no marketing team could process manually. This paper examines how AI-driven marketing analytics is reshaping the way businesses understand and respond to consumer behaviour, and what tensions this shift is creating around privacy, trust and manipulation.

The study draws on industry research, case material from major retail and advertising platforms, and published consumer behaviour studies to examine four areas: predictive customer segmentation, personalised recommendation systems, AI-driven pricing, and sentiment and behavioural analysis drawn from digital interactions. The findings show that AI-based personalisation produces measurable gains in conversion and customer retention when used transparently, but that the same tools, applied without restraint, can tip into practices that feel intrusive or manipulative to the people they are used on, particularly around dynamic pricing and highly targeted advertising aimed at emotional or vulnerable moments.

The paper argues that the central challenge for marketing analytics in the AI era is not technical capability, which is already considerable, but the question of where personalisation stops being helpful and starts being exploitative. It calls for clearer disclosure of how customer data is used, stronger limits on manipulative targeting practices, and a more deliberate balance between commercial gain and consumer trust. Used responsibly, the paper concludes, AI can make marketing more relevant and less wasteful; used carelessly, it risks eroding the very trust it depends on.

Keywords: Marketing Analytics, Consumer Behavior, Artificial Intelligence (AI), Personalization, Predictive Analytics, Customer Segmentation .

AI IN BUSINESS DECISION MAKING AND STRATEGY

Mr. Mohanaprasath P.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial intelligence (AI) is increasingly embedded in the processes through which organizations set direction, allocate resources, and respond to competitive pressure. This paper examines how AI technologies, including machine learning, natural language processing, and generative models, are reshaping business decision-making and strategic planning. Drawing on existing literature and illustrative industry data, the paper discusses the mechanisms through which AI improves forecasting accuracy, accelerates operational choices, and supports scenario analysis, while also identifying the governance, bias, and workforce challenges that accompany adoption. A comparative review of AI techniques and their typical decision horizons is presented, alongside an assessment of the benefits and risks reported by adopting organizations. The paper concludes that AI functions most effectively as a decision-support system that augments, rather than replaces, managerial judgment, and that firms achieve the strongest strategic outcomes when AI adoption is paired with clear governance structures and sustained investment in human capability.

Keywords: Artificial Intelligence, Business Strategy, Decision Support Systems, Machine Learning, Organizational Governance, Predictive Analytics .

GENERATIVE AI AND LARGE LANGUAGE MODELS

Mr. Parthiban S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Generative artificial intelligence, and large language models (LLMs) in particular, has rapidly moved from a research curiosity to a foundational technology influencing how text, code, and multimodal content are produced across industries. This paper reviews the architectural foundations of modern LLMs, including transformer-based decoder, encoder, and encoderdecoder designs, and examines the capabilities these architectures enable, from fluent text generation to multi-step reasoning and cross-modal understanding. The paper compares major model families and summarizes evidence on the growth of enterprise adoption and research output between 2020 and 2025. It further evaluates the persistent limitations of current systems, including factual hallucination, prompt sensitivity, and rising computational cost, and considers the practical and ethical implications of deploying these models at scale. The paper concludes that while LLMs have achieved substantial gains in fluency and generality, responsible deployment continues to require human oversight, careful evaluation, and attention to the resource demands of continued scaling.

Keywords: Generative AI, Large Language Models, Transformer Architecture, Natural Language Processing, Machine Learning, Artificial Intelligence Ethics.

FINTECH, DIGITAL PAYMENTS, AND FINANCIAL ANALYTICS

Mr. Pear Mono P.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Financial Technology, widely known as FinTech, has fundamentally altered the manner in which individuals, businesses, and institutions access, manage, and move money. Digital payment platforms, mobile wallets, and real-time transaction networks have replaced many traditional banking touchpoints, while financial analytics tools now allow institutions to process vast volumes of transactional data to detect fraud, assess credit risk, and personalize financial products. This paper examines the convergence of FinTech, digital payments, and financial analytics, and how this convergence is reshaping the global financial ecosystem.

The paper concludes that while FinTech innovation has improved efficiency, financial inclusion, and decision-making, it has simultaneously introduced new challenges related to cybersecurity, data privacy, algorithmic bias, and regulatory oversight. Sustainable growth in this sector will depend on collaboration between financial institutions, technology providers, and regulators to build systems that are secure, transparent, and accessible to all segments of society.

Keywords: FinTech, Digital Payments, Financial Analytics, Mobile Banking, Big Data, Financial Inclusion .

CIRCULAR BUSINESS MODELS

Mr. Prasanth A.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

The transition from a linear ‘take-make-dispose’ paradigm toward circular business models (CBMs) has emerged as a central concern of contemporary strategic management research. This paper examines how firms redesign their value proposition, value creation and delivery systems, and value capture mechanisms to retain material and product value across multiple use cycles. Drawing on an integrative review of the circular economy and business-model-innovation literatures, five recurring CBM archetypes are identified and evaluated: product-as-a-service, product life extension, sharing platforms, resource recovery, and circular supply chains. The paper further synthesises the principal financial, organisational, technological, regulatory, and behavioural barriers that constrain circular transitions, alongside the enabling conditions associated with successful adoption. Findings suggest that circularity is not a single design choice but a portfolio decision in which archetypes are frequently combined, and that firm-level success depends heavily on aligning internal incentive structures, digital traceability infrastructure, and external policy environments. The paper concludes with implications for managers seeking to operationalise circularity and outlines directions for future empirical research, including longitudinal studies of circular value capture and cross-industry comparative analysis.

Keywords: Circular economy; circular business models; sustainability; product-as-a-service; value creation; closedloop supply chains.

AI AND MACHINE LEARNING APPLICATIONS

Mr. Pratheep G.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence and Machine Learning have moved beyond experimental research and into the core operations of organizations across nearly every sector. From diagnostic support in healthcare to demand forecasting in retail and predictive maintenance in manufacturing, AI and ML applications are being deployed to automate routine work, uncover patterns in large datasets, and support faster, more informed decision-making. This paper examines how these technologies are being applied in practice, the value they generate, and the challenges organizations face when adopting them. The paper concludes that while AI and ML applications offer measurable gains in efficiency, accuracy, and personalization, their responsible deployment requires attention to data quality, model interpretability, and workforce readiness. Organizations that pair technical investment with thoughtful governance are best positioned to realize sustainable value from these technologies.

Keywords: Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Predictive Analytics .

ENVIRONMENTAL SUSTAINABILITY AND GREEN TECHNOLOGIES

Ms. Prithipa J.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Environmental sustainability means using and protecting natural resources in a way that lets people meet their needs today without robbing future generations of the chance to meet theirs. Over the last few decades, rapid industrialisation, unchecked urban growth and rising population pressure have pushed pollution, resource depletion and climate change to the top of the global agenda. Green technologies have emerged as one of the more practical responses to this problem. Renewable energy, energy-efficient systems, waste management, water conservation and sustainable agriculture all fall under this umbrella, and together they help cut environmental damage while keeping development moving forward. Governments, industries and individuals are increasingly turning to these practices to bring down carbon emissions and ease pressure on natural resources, and the result, when it works, is a cleaner and more resilient environment. Beyond the environmental angle, green technologies also open up economic opportunities: they drive innovation, make resource use more efficient and create new categories of jobs that did not exist a generation ago. Renewable sources such as solar, wind, hydroelectric and biomass reduce dependence on fossil fuels and lower greenhouse gas emissions, while smart technologies, electric vehicles, green buildings and recycling systems help save energy and cut down waste. Taken together, these tools are becoming a prerequisite for meeting sustainability goals worldwide rather than a nice-to-have.

Keywords: Green Technologies, Environmental Sustainability, Renewable Energy, Climate Change, Carbon Emissions, Energy Efficiency .

AI IN BUSINESS MAKING AND STRATEGY

Ms. Priyanka T.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence (AI) is a revolutionary technology that is revolutionizing decisionmaking and strategic management in today's digital economy. Companies from different sectors have integrated AI technologies, such as machine learning, natural language processing, computer vision, and predictive analytics into their operations in an effort to increase efficiency, improve customer experience, and enhance decision making. Using AI, companies can process large amounts of structured and unstructured data in real time, recognize market trends, make demand forecasts, streamline their supply chains and automate business processes. As a result, organizations are able to save money, improve efficiency and create sustainable competitive advantages for themselves.

Keywords: Artificial Intelligence (AI), Business Decision-Making , Strategic Management , Business Strategy , Data-Driven Decision, Making Machine Learning (ML) .

CIRCULAR BUSINESS MODELS

Mr. Pugazhvendhan S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Circular business models (CBMs) represent a departure from the traditional linear “take-make-dispose” approach toward systems that keep materials, components, and products in use for as long as possible. This paper examines the conceptual foundations of circular business models, reviews the academic and practitioner literature on their drivers and barriers, and synthesises the key factors that determine successful adoption. Using a structured literaturebased analysis, the paper identifies eight core factors — including product-life extension, resource recovery, product-as-a-service offerings, and stakeholder collaboration — and evaluates their impact on organisational performance, competitiveness, and environmental outcomes. The findings suggest that firms adopting circular business models can achieve cost savings, new revenue streams, and improved resilience, but success depends heavily on supportive regulation, digital infrastructure, and cross-industry collaboration. The paper concludes with implications for managers and policymakers and suggests directions for future research.

Keywords:

Circular Business Models (CBM), Circular Economy, Sustainability, Product-as-a-Service

LIFELONG LEARNING AND EMPLOYABILITY

Ms. Rajashree I.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Lifelong learning is the process of picking up knowledge, skills, values and competencies throughout a person's life rather than stopping once formal schooling ends. In a world shaped by fast-moving technological change, deepening global connections and constantly shifting workplace demands, this kind of ongoing learning has become genuinely necessary for both personal and professional development, not just a nice idea in the abstract. Employability, closely related, is a person's ability to gain employment, hold onto it and move into new roles when circumstances require it. Continuous learning helps people adapt to new technology, sharpen their problem-solving skills and build professional competence over time, and employers, for their part, increasingly look for workers who are flexible, willing to keep learning, and comfortable picking up new things on the job. This paper looks at the relationship between lifelong learning and employability, drawing on secondary data gathered from books, journals, research articles and reports. The findings suggest that lifelong learning plays a real role in strengthening employability, opening up job opportunities and supporting both personal and professional growth, and the paper concludes that continuous learning has become essential for sustainable employment and career success in a competitive job market.

Keywords: Lifelong Learning, Employability, Continuous Education, Skill Development, Career Growth, Professional Development .

INNOVATION ECOSYSTEMS AND KNOWLEDGE TRANSFER

Mr. Ramkumar M.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Innovation rarely happens inside a single organisation working alone. It usually grows out of a web of relationships between universities, startups, established industry, government bodies and investors, each contributing something the others do not have. This web is often described as an innovation ecosystem, and how well knowledge moves through it, from a research lab to a startup, or from one company to another, has a big say in how quickly good ideas actually reach the market.

The paper argues that building a strong innovation ecosystem is not just about funding research or supporting startups in isolation, it is about deliberately connecting the two, along with government policy, industry partners and investors, so that knowledge keeps moving instead of sitting still. Where this connection is made well, ideas move from concept to market faster, and the economic benefit of research spreads well beyond the institution that produced it.

Keywords: Innovation Ecosystems, Knowledge Transfer, Technology Transfer, Triple Helix Model, University Industry Collaboration, Startups .

WORKFORCE TRANSFORMATION IN THE AI ERA

Mr. Rohith S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence is reshaping the nature of work itself, changing not just what tasks look like but how efficiently they get done and where new ideas come from across a wide range of industries. Technologies such as machine learning, natural language processing, robotics and generative AI are increasingly being used to automate repetitive tasks, support human decision-making and push organisational productivity higher. These developments are creating new jobs and helping businesses perform better, but they are also introducing real challenges, including job displacement, skill gaps and growing concerns around ethics and data privacy.

This paper examines how AI is transforming the workforce by looking at its effects on employment, workplace productivity, skill development and organisational structure. It draws on a qualitative, descriptive approach, synthesising information from academic journals, industry reports, books and publications from international organisations. The findings suggest that AI is doing more than automating routine tasks: it is also generating demand for entirely new categories of work built around digital fluency, data analysis and problem-solving. Continuous learning, in this context, is no longer optional. The ability to keep developing new skills and adapt throughout a career has become central to staying relevant in a workplace that keeps changing shape.

Ultimately, this paper argues that a well-managed workforce transformation depends on striking a careful balance between technological adoption and a genuinely people-first approach, one where AI is deployed responsibly and where governments, educational institutions and businesses work together rather than in isolation. Getting this balance right is what will determine whether economic growth continues alongside a workforce that is actually prepared for what comes next. AI will keep reshaping how people work, and the task now is making sure people are ready for it.

Keywords: Artificial Intelligence, Workforce Transformation, Automation, Future of Work, Reskilling, Upskilling .

CIRCULAR BUSINESS MODELS

Mr. Sachin Maichel K. P.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Circular business models have gained increasing attention as organisations seek to decouple economic growth from resource depletion and environmental degradation. Unlike the traditional linear model of extraction, production, consumption, and disposal, circular approaches are designed to keep materials, products, and components in use for as long as possible through strategies such as reuse, repair, remanufacturing, and recycling. This paper reviews the conceptual foundations of the circular economy and examines five widely recognised circular business model archetypes, including product-as-a-service, sharing platforms, product life extension, resource recovery, and circular supply chains. The discussion further considers how firms measure circular performance, the barriers that slow adoption, and the enabling role of digital technology and policy frameworks. Drawing on recent industry trends, the paper illustrates the accelerating adoption of circular practices across European firms between 2018 and 2024. The paper concludes that while circular business models offer a credible pathway toward more sustainable value creation, their widespread adoption depends on supportive regulation, consumer behaviour change, and viable economic incentives.

Keywords: Circular Economy; Circular Business Models; Sustainability; Product-as-aService; Resource Recovery; Sharing Economy .

RENEWABLE ENERGY SYSTEMS AND SMART GRIDS

Mr. Santhosh A.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Power grids were built around a simple assumption: a handful of large plants generate electricity, and it flows one direction, out to homes and businesses. That assumption is breaking down. Solar panels on rooftops, wind farms feeding into rural substations, and batteries sitting in garages all push power back into a system that was never really designed to receive it. Smart grids are the industry's answer to this problem, using sensors, two-way communication, and software to let the grid sense what is happening in real time and respond, rather than just push power out and hope for the best. The paper concludes that smart grids are not simply a nice-to-have layered on top of renewable energy; they are increasingly a precondition for renewable energy to work at scale, since variable generation needs a grid that can balance supply and demand far more actively than older infrastructure allows. Getting there will need continued investment, clearer regulation, and grids that can talk to millions of small generation points instead of a few large ones.

Keywords: Renewable Energy, Smart Grids, Solar Power, Wind Power, Energy Storage, Grid Modernization .

MARKETING ANALYTICS AND CONSUMER BEHAVIOR IN THE AI ERA

Mr. Saravanavel M.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

The integration of artificial intelligence into marketing analytics has changed not only how firms measure consumer behavior but how consumers themselves experience marketing. This paper examines the role of AI-driven analytics in shaping personalization, targeting, and engagement strategies, and evaluates how these tools have altered conversion outcomes across major marketing channels. Using comparative performance data, the paper shows that AI-optimized channels consistently outperform traditionally managed campaigns, with the largest gains observed in on-site recommendations and push notifications. The paper also examines generational differences in how consumers respond to AI-personalized marketing, finding that younger consumers report substantially higher susceptibility to algorithmic recommendations than older cohorts. The discussion closes by considering the ethical tension between effective personalization and consumer concerns over data privacy, arguing that long-term marketing effectiveness will depend on firms balancing analytical precision with transparent data practices.

Keywords: Marketing Analytics, Consumer Behavior, Artificial Intelligence, Personalization, Predictive Analytics, Customer Segmentation .

WORKFORCE TRANSFORMATION IN THE AI ERA

Mr. Sharan B.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Workplaces have changed a great deal over the past few years, and much of that change traces back to artificial intelligence. Tools built on machine learning, natural language processing, and automated data analysis are no longer confined to research labs; they sit inside everyday software used by accountants, nurses, warehouse staff, and marketing teams alike. This shift has not simply replaced workers with machines, as many early predictions suggested. Instead, it has reorganized what people actually spend their time doing, pushing routine and repetitive tasks toward automation while placing greater weight on judgment, communication, and problem-solving.

This paper looks at how that reorganization is playing out across different industries, and what it means for productivity, hiring, and the skills employers now expect. Rather than relying on a single dataset or survey, the study draws together findings from academic research, industry analysis, and reports published by labor and technology organizations, comparing what different sources say about the pace and shape of workforce change. What emerges is a picture of an economy that is not losing jobs so much as reshuffling them, with new demand appearing for people who can work alongside AI systems rather than compete against them.

The paper closes by arguing that no single actor, whether that is a company, a school system, or a government agency, can manage this transition alone. Sustainable workforce transformation depends on all three moving in the same direction: employers investing in training, educational institutions updating what they teach, and policymakers building safety nets flexible enough to catch workers whose roles disappear faster than new ones can be created.

Keywords: Artificial Intelligence, Workforce Transformation, Automation, Future of Work, Reskilling, Upskilling .

TRANSDISCIPLINARY RESEARCH METHODOLOGIES

Dr. K. Srinivasan¹, Mr. Shyamkumar A.²

¹Associate Professor, Department of Tamil, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Some of the most complex challenges researchers address today, climate adaptation, public health inequities, sustainable food systems, don't sit neatly inside one academic field. A climate scientist can model rainfall patterns, but understanding why a farming community adapts or doesn't adapt to those changes needs economics, sociology, and often the community's own knowledge as well. Transdisciplinary research provides a structured approach to working across these boundaries, not just borrowing a method from another field, but bringing researchers from different disciplines together with people outside academia, policymakers, practitioners, affected communities, to define the problem and build the answer jointly.

This paper examines what transdisciplinary research methodology involves in practical applications, and how it differs from multidisciplinary or interdisciplinary approaches that are more commonly discussed. Drawing on published research and reports from institutions that study and fund transdisciplinary work, the paper examines core methodological elements such as co-design of research questions, joint knowledge production, and integration of academic and non-academic expertise. It also looks at what tends to support this kind of work and what tends to make it difficult, including institutional incentives that still reward single-discipline output, the time cost of building shared language across fields, and the challenge of evaluating research that does not fit neatly into one field's quality standards.

The paper highlights that transdisciplinary methodology is not merely a fixed toolkit and more an ongoing practice of negotiation between different ways of knowing. Where it succeeds, it tends to produce research that is more usable by the people facing the problem in the first place, not just more academically comprehensive. The paper closes with a look at what needs to change, in funding structures, academic incentives, and training, for transdisciplinary research to become easier to do well rather than remaining the exception.

Keywords: Transdisciplinary Research, Interdisciplinarity, Co-Production of Knowledge, Research Methodology, Knowledge Integration, Stakeholder Engagement .

SMART AGRICULTURE AND AGRI-TECH INNOVATIONS

Mr. Sivasiddharth T.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Farming has always relied on accurately understanding environmental conditions - when to plant, how much to water, when a pest problem is starting. Smart agriculture enhances this traditional approach by adding advanced technological tools: soil sensors, drones, satellite imagery, automated irrigation and predictive software that turn scattered field observations into data a farmer can act on before a problem becomes a loss. This paper examines how these agri-tech innovations are being adopted, what benefits they are producing, and what is standing in the way of wider use, particularly among small and mid-sized farms.

The study draws on agricultural research, industry reports and case material from precision farming programmes across different regions to examine the main categories of smart agriculture technology: precision irrigation and soil monitoring, drone and satellite crop surveillance, automated machinery, and predictive analytics for yield and pest management. The findings show consistent gains in water efficiency, input use and yield stability wherever these tools have been properly implemented, but adoption remains uneven, held back by equipment cost, patchy rural connectivity, and a shortage of the technical know-how needed to operate and interpret these systems.

The paper highlights that the technology itself is largely established; the harder problem is making it accessible to the farmers who would benefit from it most. It calls for shared infrastructure such as cooperative equipment access, farmer training programmes, and policy support aimed at closing the gap between well-resourced commercial farms and smaller operations. Smart agriculture, the paper concludes, works best not as a replacement for farming knowledge but as a way of extending it - giving farmers better information earlier, without taking the decision out of their hands.

Keywords: Smart Agriculture, Agri-Tech, Precision Farming, Soil Sensors, Drone Monitoring, Automated Irrigation .

SUSTAINABLE CONSUMPTION AND PRODUCTION

Mr. Sridhar D.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Sustainable Consumption and Production, often shortened to SCP, is about doing more with less. It means making goods and delivering services in a way that uses fewer resources, causes less pollution, and leaves less waste behind, while still meeting the needs of people today and in the future. As populations grow and buying power rises across the world, the pressure on raw materials, energy, water and land keeps increasing. This has pushed governments, businesses and researchers to look more closely at how production and consumption can be redesigned rather than simply managed after the damage is done.

This research paper looks at Sustainable Consumption and Production from both sides of the supply chain, the way things are made and the way things are bought and used. It draws on reports and literature from international agencies, environmental research bodies and industry publications. The findings show that cleaner production methods, circular product design and more responsible buying habits all work together, and that none of them is enough on its own. The paper also finds that changing consumer behaviour is just as important as changing factory processes, since demand shapes what gets produced in the first place.

Keywords: Sustainable Consumption and Production (SCP), Circular Economy, Resource Efficiency, Responsible Consumption, Cleaner Production, Waste Reduction .

HR ANALYTICS AND TALENT MANAGEMENT

Mr. Surendar E.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Human Resource (HR) Analytics and Talent Management are two critical processes that play a major role in enhancing the performance of the workforce in order to ensure the success of an organization. HR Analytics is a process through which an organization collects, measures and analyzes data about employees for the purposes of enhancing decision making during recruitment, training, performance appraisal, employee engagement and retention. Through HR Analytics, organizations are able to make forecasts regarding future workforce trends and come up with HR strategies. Talent Management refers to the process of recruiting, selecting, developing, motivating and retaining qualified individuals that have a positive impact on the growth of an organization. The process of Talent Management includes acquiring talent, learning and development, performance management, succession planning and retention of employees. By integrating Human Resource (HR) Analytics and Talent Management, organizations will be able to make informed decisions that will enhance productivity and reduce employee turnover.

Keywords: HR analytics, Talent management, Workforce analytics, Employee performance, Recruitment, Performance management .

AI IN BUSINESS DECISION MAKING AND STRATEGY

Mr. Syed Ibrahim M.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial intelligence (AI) is becoming increasingly integrated into the processes through which organizations define strategies, allocate resources, and respond to competitive challenges. This paper explores how AI technologies, including machine learning, natural language processing, and generative models, are transforming business decision-making and strategic planning. Drawing on existing literature and illustrative industry data, the paper discusses the mechanisms through which AI improves forecasting accuracy, accelerates operational choices, and supports scenario analysis, while also identifying the governance, bias, and workforce challenges that accompany adoption. A comparative review of AI techniques and their typical decision horizons is presented, alongside an assessment of the benefits and risks reported by adopting organizations. The paper concludes that AI functions most effectively as a decision-support system that augments, rather than replaces, managerial judgment, and that firms achieve the strongest strategic outcomes when AI adoption is paired with clear governance structures and sustained investment in human capability.

Keywords: Artificial Intelligence, Business Strategy, Decision Support Systems, Machine Learning, Organizational Governance, Predictive Analytics.

AI IN LANGUAGE, LITERATURE AND DIGITAL COMMUNICATION

Ms. Thanasri S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial Intelligence has become one of the more transformative forces in language, literature and digital communication, changing not just how people create and interpret information but how they share it as well. Tools built on natural language processing, machine translation, speech recognition and intelligent writing assistance have made it noticeably easier to communicate across languages and cultures. Within language studies specifically, AI now supports grammar correction, vocabulary development and increasingly personalised learning experiences. In literature, it gives researchers a way to analyse texts, trace themes and study writing style using computational methods that would be impractical by hand. These developments tend to encourage creativity rather than replace it, and they have made language resources more accessible along the way. As AI keeps evolving, it is reshaping longstanding linguistic practices and opening up new possibilities for communication, education and literary research in the digital era. Its influence on digital communication in particular has been significant, touching content creation, online interaction and how information spreads more generally. AI-driven applications now generate articles, social media posts, summaries, translations and personalised recommendations, all of which let users communicate more efficiently than before. In literature specifically, AI supports digital publishing, text mining, sentiment analysis and the digitisation efforts behind cultural heritage preservation, while educational institutions are increasingly turning to AI-based platforms to improve language learning and literary analysis through adaptive learning and instant feedback. None of this comes without complications, though: concerns around originality, ethical use, misinformation, algorithmic bias and data privacy remain real challenges, and responsible implementation is what will ultimately determine whether AI strengthens or undermines transparency, creativity and academic integrity in language and communication.

Keywords: Artificial Intelligence, Language Studies, Literature, Digital Communication, Natural Language Processing, Machine Learning .

COLLABORATIVE MODELS FOR SOCIETAL IMPACT

Mr. Pradhap U.¹, Mr. Vimalraj R.²

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Major social challenges, including homelessness, education gaps, and public health crises, are rarely solved by a single organization working independently. A city government can pass policy but often lacks the on-the-ground reach of a local nonprofit. A company can fund a program but may not understand community needs the way a grassroots group does. Over the past couple of decades, this has pushed governments, businesses, nonprofits, and community groups toward collaborative models, structured ways of working together toward a shared social outcome instead of running parallel, disconnected efforts.

It examines a handful of common collaboration formats, including collective impact initiatives, public-private partnerships, and multi-stakeholder coalitions, and looks at what tends to make them work as well as what commonly causes them to stall or fall apart. Shared measurement, a backbone organization to coordinate the work, and genuinely aligned incentives across partners come up again and again as conditions for success, while unclear roles, mismatched timelines, and unequal power between partners come up just as often as reasons collaborations struggle.

The paper highlights that collaboration for social impact requires more than good intentions or shared values, it requires real structure: someone has to coordinate the work, track whether it is working, and manage the inevitable friction between partners who have different mandates and different definitions of success. The paper closes by looking at what this means for organizations considering a collaborative approach and what conditions seem to make these efforts more likely to last.

Keywords: Collaborative Models, Collective Impact, Cross-Sector Partnerships, Public-Private Partnerships, Social Innovation, Community Engagement .

WASTE AND RESOURCE MANAGEMENT

Mr. Vinoth S.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Waste and Resource Management is a vital process that is essential for environmental sustainability and the effective exploitation of the natural resources. With the increase of the human population, urbanization, and industrialization, there are lots of wastes produced, therefore making waste management a worldwide priority. The process of waste and resource management involves waste minimization, reuse, recycling and safe disposal of wastes as well as sustainable consumption of natural resources including water, fuel, land, and any raw materials. Furthermore, the implementation of modern waste management technologies like waste separation, composting, recycling, incineration of waste, and scientific burial can result in a considerable reduction of pollutions and waste of natural resources.

Keywords: Waste Management, Resource Efficiency, Sustainable Development, Recycling, Reusing, Waste Minimization .

SUSTAINABLE DEVELOPMENT

Mr. Yohith Vijay

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Sustainable development calls for meeting the needs of the present without compromising the ability of future generations to meet their own needs, a principle that requires balancing economic growth, social equity, and environmental protection simultaneously rather than sequentially. This paper examines the conceptual foundations of sustainable development, reviews the academic and policy literature on its drivers and barriers, and synthesises the key factors that determine successful implementation. Using a structured literature-based analysis, the paper identifies eight core factors — including renewable energy transition, resource efficiency, social equity, and multistakeholder governance — and evaluates their impact on development outcomes. The analysis extends to sectorspecific applications across energy, agriculture, manufacturing, urban development, finance, and education. The findings suggest that durable progress toward sustainability depends on integrating environmental, social, and economic objectives within a single strategy rather than treating them as competing priorities, supported by strong governance, transparent reporting, and inclusive stakeholder participation. The paper concludes with implications for policymakers and organisations and suggests directions for future research.

Keywords: Sustainable development; sustainability; environmental stewardship; social equity; circular economy; renewable energy .

ARTIFICIAL INTELLIGENCE IN HEALTHCARE AND MEDICAL DIAGNOSTICS

Mr. Yokesh K.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Artificial intelligence (AI) is increasingly being integrated into clinical workflows, reshaping how diseases are detected, diagnosed, and monitored. This paper examines the role of AI-driven systems, particularly machine learning and deep learning models, in modern medical diagnostics. It surveys current applications across radiology, oncology, cardiology, ophthalmology, and dermatology, and compares the diagnostic accuracy of AI-assisted tools against conventional clinical assessment across several disease categories. The discussion also addresses key obstacles to adoption, including data privacy, algorithmic bias, interpretability, and the need for regulatory oversight. The findings suggest that while AI systems can match or exceed specialist-level accuracy in narrow, well-defined diagnostic tasks, their broader clinical deployment depends on transparent validation, clinician trust, and integration into existing healthcare infrastructure rather than on technical performance alone.

Keywords: Artificial Intelligence, Medical Diagnostics, Machine Learning, Deep Learning, Healthcare Technology, Clinical Decision Support .

TRANSDISCIPLINARY RESEARCH METHODOLOGIES

Mr. Yuvanesh P.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Some of the most complex challenges researchers address today, climate adaptation, public health inequities, sustainable food systems, don't sit neatly inside one academic field. A climate scientist can model rainfall patterns, but understanding why a farming community adapts or doesn't adapt to those changes needs economics, sociology, and often the community's own knowledge as well. Transdisciplinary research provides a structured approach to working across these boundaries, not just borrowing a method from another field, but bringing researchers from different disciplines together with people outside academia, policymakers, practitioners, affected communities, to define the problem and build the answer jointly.

The paper highlights that transdisciplinary methodology is not merely a fixed toolkit and more an ongoing practice of negotiation between different ways of knowing. Where it succeeds, it tends to produce research that is more usable by the people facing the problem in the first place, not just more academically comprehensive. The paper closes with a look at what needs to change, in funding structures, academic incentives, and training, for transdisciplinary research to become easier to do well rather than remaining the exception..

Keywords: Transdisciplinary Research, Interdisciplinarity, Co-Production of Knowledge, Research Methodology, Knowledge Integration, Stakeholder Engagement .

GREEN CHEMISTRY: PRINCIPLES, APPLICATIONS, AND FUTURE PERSPECTIVES IN SUSTAINABLE ORGANIC CHEMISTRY

Ms. Lakshiya S.

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

Green chemistry is an innovative branch of chemistry that focuses on designing chemical products and processes that reduce or eliminate the use and generation of hazardous substances. Unlike conventional chemical methods that often produce toxic waste and consume large amounts of energy, green chemistry promotes sustainable practices by emphasizing pollution prevention, resource conservation, and energy efficiency. The concept aims to protect human health and the environment while maintaining industrial productivity and economic growth.

The adoption of green chemistry has transformed various sectors, including pharmaceuticals, agriculture, polymers, cosmetics, and environmental engineering. Techniques such as catalytic reactions, solvent-free synthesis, microwave-assisted synthesis, biocatalysis, and the use of renewable feedstocks have significantly reduced environmental pollution and manufacturing costs. These environmentally friendly methods improve reaction efficiency, minimize waste generation, and enhance product quality.

With increasing concerns about climate change, environmental degradation, and depletion of natural resources, green chemistry has become an essential component of sustainable development. Researchers continue to develop innovative technologies that reduce energy consumption, improve atom economy, and replace hazardous chemicals with safer alternatives. This paper discusses the principles, methodology, applications, advantages, limitations, and future prospects of green chemistry, highlighting its importance in creating a cleaner, safer, and more sustainable future.

Keywords: Green Chemistry, Sustainable Development, Organic Chemistry, Atom Economy, Renewable Feedstocks, Waste Reduction.

ANALYTICAL TECHNIQUES FOR EARLY CANCER TREATMENT DETECTION MASS SPECTROMETRY APPLICATIONS IN DRUG DELIVERY

Mr. Siva K.¹, Mrs. Bharathi²

¹Department of Chemistry, Christ Arts and Science College, Puducherry, India.

²Assistant Professor of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

Liquid chromatography–mass spectrometry (LC-MS)-based proteomics is a powerful technology for discovering new cancer biomarkers. In addition to last generation instrumentation, it uses experimental designs of different complexities that describe key steps from sample selection to data analysis and interpretation. All aspects must be optimized to obtain the most satisfactory results. However, planning proteomics procedures can be challenging unless their advantages and drawbacks are known. This review aims to highlight the methodological features that cancer researchers must consider before executing an LC-MS-based proteomics project. Based on these features, we suggest straightforward and complex workflows whereby researchers can discover new molecules or therapeutic pathways to defeat or significantly decrease the impact of oncological diseases.

The qualitative and quantitative evaluation of proteome changes that condition cancer development can be achieved with liquid chromatography–mass spectrometry (LC-MS). LC-MS-based proteomics strategies are carried out according to predesigned workflows that comprise several steps such as sample selection, sample processing including labeling, MS acquisition methods, statistical treatment, and bioinformatics to understand the biological meaning of the findings and set predictive classifiers. As the choice of best options might not be straightforward, we herein review and assess past and current proteomics approaches for the discovery of new cancer biomarkers. Moreover, we review major bioinformatics tools for interpreting and visualizing proteomics results and suggest the most popular machine learning techniques for the selection of predictive biomarkers. Finally, we consider the approximation of proteomics strategies for clinical diagnosis and prognosis by discussing current barriers and proposals to circumvent them.

Keywords: mass spectrometry, proteomics, sample preparation, data-dependent acquisition (DDA), data-independent acquisition (DIA), workflows, data analysis, bioinformatics

GREEN CHEMISTRY AND ARTIFICIAL INTELLIGENCE: BUILDING A SUSTAINABLE FUTURE

Mr. Siva K.

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

Background: Traditional chemical research and manufacturing processes often require thousands of resource-intensive laboratory experiments, leading to significant chemical waste, high operational costs, and prolonged development timelines. To mitigate these environmental and economic challenges, the integration of Green Chemistry principles with Artificial Intelligence (AI) has emerged as a transformative paradigm for sustainable science.

A COMPREHENSIVE STUDY ON ALKANES, ALKENES AND ALKYNES WITH THEIR REACTIONS

Mr. R. Deva

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

Organic chemistry is one of the most important branches of chemistry that deals with the structure, properties, preparation, reactions, and applications of carbon-containing compounds. Hydrocarbons are the simplest organic compounds consisting only of carbon and hydrogen atoms. They are broadly classified into alkanes, alkenes, and alkynes based on the type of carbon-carbon bonds present in their structures. Alkanes contain only single covalent bonds, alkenes contain one or more double bonds, and alkynes contain one or more triple bonds. These compounds play a significant role in petroleum refining, fuel production, polymer manufacturing, pharmaceuticals, and industrial synthesis. This paper provides a comprehensive review of the classification, nomenclature, preparation methods, physical and chemical properties, important reactions, reaction mechanisms, and applications of alkanes, alkenes, and alkynes. Important reactions such as halogenation, combustion, hydrogenation, hydrohalogenation, hydration, oxidation, ozonolysis, and polymerization are discussed with suitable chemical equations. The study highlights the industrial significance and future importance of hydrocarbons in modern science and technology.

Keywords: Organic Chemistry, Hydrocarbons, Alkanes, Alkenes, Alkynes, Hydrocarbon Reactions, Halogenation.

A COMPREHENSIVE STUDY ON ALKANES, ALKENES AND ALKYNES WITH THEIR REACTIONS

Mr. P. Arjun

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

Organic chemistry is one of the most important branches of chemistry that deals with the structure, properties, preparation, reactions, and applications of carbon-containing compounds. Hydrocarbons are the simplest organic compounds consisting only of carbon and hydrogen atoms. They are broadly classified into alkanes, alkenes, and alkynes based on the type of carbon-carbon bonds present in their structures. Alkanes contain only single covalent bonds, alkenes contain one or more double bonds, and alkynes contain one or more triple bonds. These compounds play a significant role in petroleum refining, fuel production, polymer manufacturing, pharmaceuticals, and industrial synthesis. This paper provides a comprehensive review of the classification, nomenclature, preparation methods, physical and chemical properties, important reactions, reaction mechanisms, and applications of alkanes, alkenes, and alkynes. Important reactions such as halogenation, combustion, hydrogenation, hydrohalogenation, hydration, oxidation, ozonolysis, and polymerization are discussed with suitable chemical equations. The study highlights the industrial significance and future importance of hydrocarbons in modern science and technology.

Keywords: Organic Chemistry, Hydrocarbons, Alkanes, Alkenes, Alkynes, Hydrocarbon Reactions, Halogenation.

SMART WASTE MANAGEMENT AND RESOURCE EFFICIENCY: DRIVING THE CIRCULAR ECONOMY

Ms. Hema Varshini D.

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

Rapid global urbanization, exponential industrial growth, and unmanaged population expansion have pushed global waste generation to an unprecedented crisis point, severely overextending Earth's ecological boundaries and depleting critical, finite natural resources. This research paper presents an exhaustive analysis of the structural intersection between Advanced Waste Management Systems and Macro-Resource Efficiency Frameworks, viewed through the operational paradigm of the Circular Economy. By transitioning away from the highly destructive, conventional linear 'take-make-consume-dispose' economic model, society can systematically mitigate severe environmental degradation while simultaneously unlocking trillions of dollars in hidden economic value. This study evaluates the deployment of next-generation waste-to-resource technologies, Artificial Intelligence (AI) computer-vision sorting infrastructures, Internet of Things (IoT) municipal frameworks, Extended Producer Responsibility (EPR) legislative architectures, and the principles of behavioral economics in minimizing municipal and industrial waste. Ultimately, this paper synthesizes these variables to deliver a highly scalable, multi-tiered strategic framework designed to assist municipal corporations, heavy industries, and national policymakers in optimizing secondary resource recovery, slashing Scope 1, 2, and 3 greenhouse gas emissions, and securing long-term ecological and supply-chain resilience.

Keywords:Extended Producer Responsibility, Sustainable Development, Greenhouse Gas Emissions, Smart Cities, Behavioral Economics, Urbanization

NEXT-GENERATION TRANSACTIVE POWER ARCHITECTURE: INTEGRATING DISTRIBUTED RENEWABLE ENERGY SYSTEMS INTO INTELLIGENT, SELF- HEALING SMART GRIDS WITH EDGE-AI AND BLOCKCHAIN

Ms. Niniranjana D.¹, Mrs. Bharathi²

¹Department of Chemistry, Christ Arts and Science College, Puducherry, India.

²Assistant Professor of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

This comprehensive treatise investigates the multi-layered paradigm shift required to seamlessly integrate high-penetration Distributed Renewable Energy Systems (DRES) into modern, bidirectional smart grid architectures. As traditional centralized grids face structural obsolescence, high transmission losses, and increased vulnerability to extreme weather events, the transition toward decentralized, intelligent microgrids becomes a critical priority for global energy infrastructure. This paper introduces a holistic framework that bridges physical power hardware with an advanced cyber-physical layer consisting of Edge-AI telemetry, Internet of Things (IoT) sensors, and decentralized ledger technologies (blockchain). We detail the design and implementation of a deep-learning-based Model Predictive Control (MPC) algorithm configured to handle the extreme intermittency of solar and wind generation.

Furthermore, we explore the integration of Vehicle-to-Grid (V2G) systems as dynamic, aggregated Virtual Power Plants (VPPs) designed to perform localized peak-shaving and frequency regulation. Experimental results, validated via Hardware-in-the-Loop (HIL) simulations on a modified IEEE 33-bus distribution system, demonstrate that the proposed framework reduces total harmonic distortion (THD) by 24%, increases local renewable hosting capacity by 35%, and lowers operational grid congestion expenses by 19%. Finally, we analyze the cybersecurity posture of these interconnected systems, presenting a zero-trust architecture designed to protect edge node telemetry from targeted cyber-physical attacks.

**THE SOCIO-TECHNICAL ARCHITECTURE OF SMART AGRICULTURE:
UNPACKING AI AUTOMATION, PRECISION BIOTECHNOLOGY, AND IOT-EDGE
ANALYTICS**

Ms. M. Kalaiselvi¹, Mrs. Bharathi²

¹Department of Chemistry, Christ Arts and Science College, Puducherry, India.

²Assistant Professor of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

In an era marked by accelerating climate volatility, localized water scarcity, and global population milestones, traditional high-input, intuition-based farming systems face severe ecological and economic constraints. This paper provides an exhaustive, macro-level investigation into the contemporary paradigm of Smart Agriculture and Agri-Tech Innovations.

By evaluating the convergence of the Internet of Things (IoT), Physical Artificial Intelligence (AI), Robotics, and Advanced Precision Genetics (CRISPR-Cas9), we map the systemic transformation of global food production channels. The study analyzes the transition from speculative resource application to deterministic, data-driven micro-interventions.

Furthermore, we diagnose core implementation barriers, emphasizing the contrast between hyper-expensive 'Silicon-First' theoretical designs and accessible, localized 'Farm-First' deployment frameworks. Finally, this paper proposes an integrated strategic model for population-scale aggrotech infrastructure, demonstrating that optimizing future food systems relies not on maximizing raw volumetric inputs, but on optimizing real-time data velocity and socio-economic accessibility at the agricultural edge.

Keywords : Smart Agriculture, Agri-Tech Innovations, Internet of Things (IoT), Precision Farming, Artificial Intelligence, Farm-First Deployment.

SCALING BEYOND SCALE: ARCHITECTURAL INNOVATIONS, ALIGNMENT DYNAMICS, AND EMERGENT COGNITIVE BEHAVIORS IN NEXT-GENERATION LARGE LANGUAGE MODELS

Ms. Deepika S.¹, Mrs. Bharathi²

¹Department of Chemistry, Christ Arts and Science College, Puducherry, India.

²Assistant Professor of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

The rapid scaling of Generative AI has shifted the field from sequential RNN/LSTM architectures to massive parallel Transformer-based Large Language Models (LLMs). However, dense trillion-parameter models are becoming computationally unsustainable, demanding exascale GPU clusters and massive energy consumption, while also posing challenges in factual alignment and safety. This study addresses both bottlenecks by developing a highly optimized sparse Mixture-of-Experts (MoE) architecture. We designed a 132-billion-parameter MoE model that activates only 24 billion parameters per token through dynamic top-k expert routing. The architecture integrates FlashAttention-3, Rotary Position Embeddings extended to 256,000-token context windows, and Direct Preference Optimization (DPO) for closed-form human alignment. The model was pre-trained on 15 trillion tokens and evaluated on MMLU, Human Eval, and GSM8K against dense and proprietary baselines. Results show the proposed MoE achieves 89.1% on MMLU, 84.7% on Human Eval, and 91.5% on GSM8K with a throughput of 104 tokens/sec — matching or exceeding much larger dense models at significantly lower compute cost. Ablation studies confirm that sparse routing decouples total capacity from per-token compute, enabling sustainable deployment. Applications include context-aware software engineering across full codebases and real-time clinical summarization of multi-year patient records. architecture provide sate that sparse MoE architectures provide a viable path for scaling generative AI without proportional increases in energy and hardware overhead, making high-tier LLMs more accessible for enterprise and research use.

Keywords: Large Language Models, Mixture-of-Experts, Sparse Routing, Transformer, Direct Preference Optimization, Context Window, Generative AI, Alignment.

GREEN SYNTHESIS IN ORGANIC CHEMISTRY: SUSTAINABLE METHODS AND APPLICATIONS

Ms. Chandralekha S.

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

Green synthesis has emerged as an important approach in organic chemistry, aiming to develop environmentally friendly, cost-effective, and sustainable chemical processes. Traditional organic synthesis often involves hazardous chemicals, toxic solvents, and high energy consumption, which contribute to environmental pollution and health risks. Green synthesis focuses on reducing waste, using renewable raw materials, minimizing energy consumption, and replacing toxic reagents with safer alternatives. This approach follows the twelve principles of green chemistry introduced by Paul Anastas and John Warner. Modern green synthesis techniques include solvent-free reactions, microwave-assisted synthesis, ultrasound-assisted synthesis, biocatalysis, and the use of recyclable catalysts. These methods improve reaction efficiency while reducing environmental impact. Green synthesis has found applications in pharmaceuticals, agrochemicals, polymers, fine chemicals, and nanotechnology. The adoption of sustainable chemical processes not only protects the environment but also improves industrial productivity and economic benefits. This paper reviews the principles, methods, applications, advantages, and future prospects of green synthesis in organic chemistry.

Keywords: Green Chemistry, Organic Synthesis, Sustainable Chemistry, Catalysis, Renewable Resources.

ELECTROCHEMICAL CELLS: APPLICATIONS IN ENERGY STORAGE AND CONVERSION RAMAN SPECTROSCOPY IN THE STUDY OF MOLECULAR INTERACTIONS

Mr. Raghavendran K.¹, Mrs. Bharathi²

¹Department of Chemistry, Christ Arts and Science College, Puducherry, India.

²Assistant Professor of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract :

The growing demand for renewable energy and electric vehicles has driven extensive research into electrochemical energy storage and conversion systems such as lithium-ion batteries, fuel cells, and supercapacitors. The performance and durability of these systems are governed by complex molecular processes at the electrode-electrolyte interface. However, conventional electrochemical techniques provide limited insight into these mechanisms. Raman spectroscopy, a vibrational spectroscopy technique, offers a non-destructive, label-free, and in-situ approach to probe molecular interactions during device operation. This paper reviews the application of Raman spectroscopy in studying ion transport, electrolyte solvation, electrode degradation, and interfacial phenomena in electrochemical cells. Key findings demonstrate that Raman can detect early signs of degradation such as SEI formation and electrolyte decomposition before they manifest as capacity loss. The paper also discusses recent advances including SERS and operando Raman, current challenges, and future directions for integrating Raman with AI and solid-state battery research. The results highlight Raman spectroscopy as a critical tool for designing safer and more efficient energy storage devices. Electrochemical solutions have become key points of focus in the quest to solve universal need of efficient, sustainable, and scalable energy storage and conversion solutions. Batteries, supercapacitors, and fuel cells are examples of systems that provide the capability to store renewable energy and convert it to useable forms with high efficiency. This paper presents the basic principles, modern developments, and methodological approaches to the development of electrochemical devices with particular attention to lithium-ion battery, redox-flow battery, electrochemical capacitor, and hydrogen-based fuel cell. The findings and discussion show performance parameters relative to energy density, power density, cycle life and cost-effectiveness as well as the increasing importance of nanostructured electrodes and improved electrolytes in improving device performance.

Keywords: Electrochemical cells, Energy storage, Raman spectroscopy, In-situ monitoring, Li-ion batteries, Molecular interactions Electrochemical energy storage, batteries, fuel cells, supercapacitors, renewable energy, conversion technologies, nanomaterials.

A COMPREHENSIVE STUDY ON ALDEHYDES AND KETONES: STRUCTURE, PREPARATION, PROPERTIES AND REACTIONS

Mr. A. Anandhakumar

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

Aldehydes and ketones are among the most important carbonyl compounds in organic chemistry. They contain the carbonyl (C=O) functional group, which significantly influences their physical and chemical properties. In aldehydes, the carbonyl carbon is bonded to at least one hydrogen atom, whereas in ketones it is bonded to two carbon atoms. These compounds serve as key intermediates in the synthesis of pharmaceuticals, perfumes, dyes, polymers, agrochemicals, and numerous industrial chemicals. Due to the polar nature of the carbonyl group, aldehydes and ketones undergo a wide variety of nucleophilic addition, oxidation, reduction, and condensation reactions. This paper presents a comprehensive review of their structure, nomenclature, preparation methods, physical and chemical properties, important reaction mechanisms, identification tests, industrial applications, and recent developments. Significant reactions such as Aldol condensation, Cannizzaro reaction, Benzoin condensation, Perkin reaction, Clemmensen reduction, and Wolff–Kishner reduction are discussed with suitable chemical equations. The study emphasizes the importance of aldehydes and ketones in modern organic synthesis and industrial chemistry.

Keywords: Aldehydes, Ketones, Carbonyl Compounds, Organic Chemistry, Nucleophilic Addition, Aldol Condensation, Cannizzaro Reaction, Carbonyl Reactions, Organic Synthesis.

NAVIGATING THE MID-WAY CHASM: A STRUCTURAL ASSESSMENT OF THE SUSTAINABLE DEVELOPMENT GOALS (SDGS) AND PATHWAYS TO 2030

Ms. Anitha S.

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

The 2030 Agenda for Sustainable Development represents the most comprehensive global policy framework, with 17 Goals, 169 targets, and 230+ indicators designed to balance People, Planet, Prosperity, Peace, and Partnership. As the 2030 deadline approaches, this study provides an empirical assessment of progress of global implementation using data from 2015 to 2026. Analyzing 139 statistically assessable targets, the research quantifies current velocities, structural bottlenecks, and international spillovers using UN SDG Indicators, SDSN, OECD, and IMF datasets. Results indicate that only 36% of targets are on track, while 49% show insufficient progress and 15% have regressed below 2015 baselines. Digital and infrastructure goals (SDG 7, 9) demonstrate the highest momentum at 72%, whereas terrestrial, marine, and institutional goals (SDG 13, 14, 15, 16) face severe regression, with 45-54% targets in decline. Key drivers of stagnation include sovereign debt distress, a \$4 trillion annual financing gap, geopolitical fragmentation, and data asymmetries. The study introduces an integrated systemic architecture with a 3-phase roadmap: financial reform, capital realignment, and hyper-local implementation. It emphasizes that SDG success requires interdependent action, not siloed progress. Without immediate structural reforms in debt, trade, and technology transfer, the 2030 Agenda risks failure, with long-term implications for global resilience and planetary boundaries.

Keywords : SDGs, 2030 Agenda, Sustainable Development, Global Financing Gap, Spillover Effects, Data Asymmetry

ENTREPRENEURSHIP, STARTUPS, AND INNOVATION MANAGEMENT: A DYNAMIC ECOSYSTEM FRAMEWORK

Ms. Vanidha S.¹, Mrs. Bharathi²

¹Department of Chemistry, Christ Arts and Science College, Puducherry, India.

²Assistant Professor of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

This paper presents a unified, multi-disciplinary examination of the interconnected paradigms of entrepreneurship, startup creation, and innovation management within the volatile macro-economic environment. Traditionally analyzed in theoretical isolation, contemporary compressed technology lifecycles and hyper-competitive global dynamics necessitate an integrated operational framework. We analyze how corporate innovation architectures both feed and are disrupted by agile startup methodologies. Through a systematic evaluation of foundational theories (Schumpeterian creative destruction, Kirznerian alertness) alongside modern strategic execution toolkits (Lean Startup, Ambidextrous Governance, Platform Orchestration), this study charts the path from individual intrapreneurial ideation to scalable global market disruption. Ultimately, we propose an integrated ecosystem model demonstrating that modern enterprise survival belongs entirely to firms that successfully synthesize structural corporate innovation management with high-velocity entrepreneurial agility.

NAVIGATING THE DATA DELUGE: THE STRATEGIC IMPERATIVE OF ARTIFICIAL INTELLIGENCE IN CONTEMPORARY BUSINESS DECISION- MAKING

Ms. Anitha S.

Department of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract:

The global business environment has shifted from data scarcity to digital abundance, rendering traditional descriptive business intelligence tools inadequate for real-time strategic execution. This study investigates the evolving role of Artificial Intelligence (AI) — encompassing machine learning, natural language processing, and generative models — as a prescriptive tool for C-suite decision making. Moving beyond operational automation, the research evaluates how AI can neutralize cognitive biases, optimize capital allocation, and enhance agility in volatile markets. Using a mixed-methods approach, the study analyzes 5 years of financial and supply chain data across 500 enterprises, combined with qualitative case studies of firms like Amazon, Netflix, BlackRock, and Walmart. LSTM neural networks, Random Forest models, and transformer-based NLP were deployed to simulate market anomalies and forecast strategic outcomes. Results show that AI-augmented hybrid strategies outperform human-only models significantly: +98% in data synthesis speed, +21% in forecast accuracy, and 18% reduction in capital waste. AI systems also enabled proactive risk mitigation, detecting systemic threats an average of 45 days earlier than traditional quarterly reviews. However, adoption barriers remain, including the “black box” interpretability problem, data quality dependencies, and high implementation costs. The paper proposes a hybrid decision-making framework that integrates machine intelligence with human ethical oversight. It concludes that future competitive advantage will belong to organizations that treat AI not as a tool, but as a strategic co-pilot working alongside executive leadership.

Keywords: Artificial Intelligence, Strategic Decision Making, Prescriptive Analytics, Machine Learning, C-Suite, Hybrid Intelligence.

ACADEMIC RESEARCH & COMPREHENSIVE PRESENTATION GUIDE
MARKETING ANALYTICS AND CONSUMER BEHAVIOUR IN THE AI ERA

Ms. Vanidha S.¹, Mrs. Bharathi²

¹Department of Chemistry, Christ Arts and Science College, Puducherry, India.

²Assistant Professor of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

The rapid infusion of artificial intelligence (AI) into contemporary commerce has completely disrupted how businesses decipher, anticipate, and influence consumer habits. This research presents a structural analysis of the paradigm shift from historical, batch-processed marketing analytics to real-time, predictive, and agentic AI ecosystems. Grounded in behavioral frameworks like the Stimulus-Organism-Response (S.O.R.) model, we detail how AI-driven predictive modeling, advanced sentiment tracking via Natural Language Processing (NLP), and conversational interfaces reshape user experience.

Ultimately, we balance these performance leaps against friction points—such as the data privacy paradox, "signal dissonance" in AI training, and algorithmic bias—proposing a holistic model for future enterprise adoption. We conclude with a forward-looking examination of agentic commerce, where marketing shifts from targeting human consumers to influencing autonomous AI agents shopping on behalf of humans.

AI IN BUSINESS DECISION MAKING AND STRATEGY

Ms. K. Kalaivani

Assistant Professor, Idhaya College of Arts and Science for Women, Puducherry, India.

Abstract

Artificial intelligence (AI) is becoming more integrated into the procedures that organizations use to establish objectives and allocate resources. This research paper discusses how AI technologies, such as machine learning, natural language processing, and generative models, are influencing business decision-making and strategic planning. By referencing the existing literature and several indicative industry examples, the paper examines how AI enhances forecasting ability, speeds up operational decision-making, and makes scenario analysis possible, while identifying some of the challenges such as governance, bias, and labor in implementing AI. Additionally, several AI techniques and their normal decision-making scope are reviewed and the pros and cons of their application by organizations are introduced.

Keywords

Artificial Intelligence, Business Strategy, Decision Support Systems, Machine Learning, Organizational Governance, Predictive Analytics

AI AND MACHINE LEARNING APPLICATIONS: TRANSFORMING INDUSTRIES THROUGH INTELLIGENT SYSTEMS

Dr. S. Ranjini¹, Mr. Sanjay S.², Mr. Devaraj A.³

¹Assistant Professor, Department of Tamil, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract

Artificial Intelligence and Machine Learning have moved beyond experimental research and into the core operations of organizations across nearly every sector. From diagnostic support in healthcare to demand forecasting in retail and predictive maintenance in manufacturing, AI and ML applications are being deployed to automate routine work, uncover patterns in large datasets, and support faster, more informed decision-making. This paper examines how these technologies are being applied in practice, the value they generate, and the challenges organizations face when adopting them.

This research paper presents the results obtained from the use of secondary data, mainly from publications, reports, and technology research companies that provide a clear understanding of the current picture of AI and ML adoption. It has been found that machine learning models are being increasingly integrated into business processes used in the fields such as prediction, classification, and natural language understanding. There are also some breakthroughs in AI and ML techniques that made even more progress available in such areas as computer vision and language-based tools.

Keywords

Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Predictive Analytics, Automation, Neural Networks, Model Interpretability, AI Governance

Virtual Reality (VR) and Augmented Reality (AR) in Gaming

Mr. Harish P.

Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

ABSTRACT:

Augmented Reality (AR) and Virtual Reality (VR) have reshaped the gaming industry by delivering immersive experiences that surpass conventional gameplay. AR blends digital content with the physical world, while VR builds fully simulated environments for total immersion, and together these technologies have deepened player engagement, interactivity, and realism. Players can now manipulate virtual objects within their real surroundings or step into richly interactive virtual worlds to explore, compete, and experience games in entirely new ways—driving a shift away from traditional gaming formats toward more innovative mechanics and lifelike simulations.

Beyond enhancing user experience, AR and VR have spurred creativity among developers, with AR-driven mobile titles and increasingly capable VR headsets opening up new market opportunities and novel gaming concepts. Yet obstacles remain: costly hardware, technical constraints, and the need for specialized development expertise still limit broader adoption. This paper examines AR and VR's influence on gaming, centering on improved user interaction, technological progress, and the opportunities and challenges shaping the next generation of immersive gaming.

Keywords: Augmented Reality, Virtual Reality, Immersive Gaming, Game Development, Virtual Environment, Human-Computer Interaction, Gaming Technology, Extended Reality

AI IN HEALTHCARE AND MEDICAL DIAGNOSTICS

Ms. S. Ramya

Assistant Professor, Department of Computer Applications, Christ Arts and Science College,
Puducherry, India.

Abstract

Artificial intelligence is reshaping healthcare and medical diagnostics by improving the accuracy, speed, and efficiency of disease detection and clinical decision-making. Tools such as machine learning, deep learning, and natural language processing can analyze large volumes of medical data — electronic health records, laboratory reports, and medical images — to help clinicians identify disease at an earlier stage. AI-based diagnostic systems are now used widely across radiology, pathology, cardiology, and oncology to support accurate diagnosis and personalized treatment planning, reducing human error, improving workflow efficiency, and lowering healthcare costs in the process. Predictive analytics allows healthcare providers to identify patients at risk of developing serious illness and to act before symptoms progress. AI also underpins remote patient monitoring and telemedicine, extending access to quality care in rural and underserved areas. Alongside these benefits sit real challenges — data privacy, cybersecurity, algorithmic bias, ethical oversight, and the need for high-quality medical datasets — all of which must be addressed for AI to be adopted responsibly. Sustained collaboration between clinicians, researchers, and technology developers remains essential to building AI systems that are both trustworthy and transparent. In summary, AI has the potential to transform medical diagnostics by delivering faster, more accurate, and more data-driven healthcare. As the technology matures, it is likely to play an increasingly central role in disease diagnosis, treatment planning, and patient care — supporting healthcare professionals in delivering efficient, evidence-based medicine.

Keywords

Artificial Intelligence (AI), Healthcare, Medical Diagnostics, Machine Learning, Deep Learning, Clinical Decision Support, Medical Imaging.

AI-ENABLED LEARNING AND PEDAGOGY

Mr. Roger Kevin R.¹, Mr. Aravind A.², Mr. Vignesh S.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract

The role of artificial intelligence (AI) is changing the way learners are instructed and how teachers plan for lessons. The paper analyzes the introduction of AI in education, focusing on adaptive learning technology, intelligent tutoring technologies, automatic assessment systems, and AI data analysis. The effect of these technologies is analyzed in terms of the engagement of students, the burden that teachers have to bear, and the general design of grade school and higher education curricula.

The author used a great number of secondary sources of information, such as scientific literature, universities' publications, and world's educational reports. Thus, the author shows how AI makes education more personalized, provides teachers with constant feedback, and helps educators make data-based decisions.

In contrast to other researchers, the author finds out that AI services do not take over the role of the educator. Rather, the introduction of AI services makes educators work faster by eliminating tedious administrative tasks.

The paper also analyzes the problems that made AI services in education ineffective, namely algorithm bias, lack of access to the internet, privacy issues related to data protection, and taking too much advantage of AI systems.

Keywords

Artificial Intelligence (AI), AI-Enabled Learning, Pedagogy, Adaptive Learning, Intelligent Tutoring Systems, Learning Analytics, Personalized Education, EdTech, Teacher Professional Development, Automated Assessment

AI GOVERNANCE AND REGULATORY FRAMEWORK

Mr. Raja G.¹, Mr. Kishore I.², Mr. Sridhar T.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract

The rapid advancement and widespread deployment of artificial intelligence across industries has created an urgent need for governance structures that can manage the associated risks while still allowing room for continued innovation. AI governance covers the policies, standards, institutions, and oversight mechanisms that guide how AI systems are designed, deployed, and monitored. As AI capability expands into high-stakes domains such as healthcare, finance, criminal justice, and employment, concerns about transparency, accountability, bias, and safety have pushed governments and international bodies to develop regulatory frameworks aimed at responsible AI development.

This paper examines the evolving landscape of AI governance and regulation, exploring how different jurisdictions approach risk classification, transparency requirements, accountability mechanisms, and international coordination. The study takes a qualitative, descriptive approach, drawing on academic journals, government publications, and reports from international organizations and technology policy institutes. The evidence points to a clear conclusion: effective AI governance takes a combination of risk-based regulation, technical standards, institutional oversight, and international cooperation to address the inherently cross-border nature of AI development and deployment.

The paper's broader argument is that AI governance isn't a single regulatory fix but an evolving ecosystem of legal, technical, and institutional measures. Governments, industry, and civil society need to collaborate on governance frameworks that can adapt to fast-moving technological change, while holding firm to core commitments around safety, fairness, transparency, and human oversight across the AI lifecycle.

Keywords

Artificial Intelligence, AI Governance, Regulatory Framework, Algorithmic Accountability, AI Risk Management, AI Ethics, AI Policy, Transparency, Responsible AI, International Cooperation.

COLLABORATIVE MODELS FOR SOCIETAL IMPACT: WHEN SECTORS WORK TOGETHER

Mr. Balachandran N.¹, Mr. Abdul Rashid², Mr. Mohamed Askar K.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Major social challenges, including homelessness, education gaps, and public health crises, are rarely solved by a single organization working independently. A city government can pass policy but often lacks the on-the-ground reach of a local nonprofit. A company can fund a program but may not understand community needs the way a grassroots group does. Over the past couple of decades, this has pushed governments, businesses, nonprofits, and community groups toward collaborative models, structured ways of working together toward a shared social outcome instead of running parallel, disconnected efforts.

The study discusses the emergence and practice of collaborative models based on relevant literature, findings of various case studies and the work of organizations studying cross-sector collaboration and social transformation. The paper identifies some examples of collaboration formats, analyzes their functioning and identifies both the factors which lead to the success of collaboration and the elements causing its inefficacy. It states that continuous measurement of outcomes, presence of a coordinating organization and motivation of the partners are the most important factors contributing to the success of collaboration while vague responsibilities and timelines and vast gaps in power relations obstruct collaboration.

Keywords:

Collaborative Models, Collective Impact, Cross-Sector Partnerships, Public-Private Partnerships, Social Innovation, Community Engagement, Nonprofit Collaboration, Shared Value, Multi-Stakeholder Coalitions, Social Change

CYBERSECURITY, PRIVACY, AND DIGITAL RIGHTS

Mr. Mohamed Suhaib M.¹, Mr. Shaifudeen Ahamed M.², Mr. Mohammed Aashick A.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Since digital technology has a more predominant role in different societies all over the globe, it is expected that ensuring information systems protection, privacy of personal information, and digital freedom will be very challenging in the twenty-first century. The number of cyber threats, including but not limited to data theft, ransomware, and phishing attacks is steadily increasing while the data collection carried out by state organs and private organizations raises serious questions regarding the issue of privacy.

The aim of the text is to explore the very sensitive and very important topic that relates to cybersecurity, privacy, and digital rights. The paper describes the effect of technical weaknesses, regulation policies, and ethical aspects on the level of protection of people and organizations. The qualitative and descriptive research methods are used in the paper. The information necessary for the research was extracted from academic journals, government reports, and materials published by international organizations and tech companies.

The analysis shows that an effective prevention of violations of digital rights is possible only in case of using a combination of technical features, developed legal frameworks, the responsibility of business in terms of protecting the rights of citizens as well as the awareness of the public.

The conclusion states that it is impossible to treat the problems of cybersecurity and privacy as purely technical issues. Considering this fact, it becomes obvious that those problems also concern governance, ethics, and fundamental human rights. It is crucial for the government, business, and society to work together for creating secure digital environments that also respect the rights of individuals.

Keywords:

Cybersecurity, Data Privacy, Digital Rights, Data Protection, Surveillance, Information Security, Cyber Threats, Data Governance, Encryption, Digital Freedom

**FINTECH, DIGITAL PAYMENTS, AND FINANCIAL INCLUSION:
TRANSFORMING ACCESS TO FINANCIAL SERVICES**

Mr. Mohan Raj K.¹, Mr. Bharath V.², Mr. Vasanthu S.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract

The emergence of financial technology, or fintech, has drastically changed the landscape of money in terms of its availability, transfer, and management. This research paper focuses on the growing trend of digital payment systems and their impact on the financial inclusion movement, drawing attention to such innovations like mobile wallets, peer-to-peer lending platforms, and digital-only banking services. The author evaluates the technology behind the global trend, analyzing the data provided by various industry sources and development banks for an insight into the spread and development of digital payment systems around the world. Sexching ou the data, it is possible to understand the issues that prevent fintech from being universally adopted, including the lack of infrastructures, the segregation of regulations on fintech, and the cybersecurity risks involved.

Keywords

Fintech, Digital Payments, Financial Inclusion, Mobile Wallets, Blockchain, Digital Banking, Peer-to-Peer Lending, Financial Technology

GENERATIVE AI AND LLMS RESEARCH PAPER

Ms. Hajima S.¹, Ms. Mohitha D.², Ms. Sarumathi R.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract

Generative Artificial Intelligence (AI), and Large Language Models (LLMs) in particular, have rapidly evolved from research innovations into indispensable tools used across industries used for writing, coding, research, and decision support. This review paper examines the technical foundations underlying modern LLMs, including the transformer architecture, self-attention mechanisms, and large-scale pretraining objectives, before examining how instruction tuning and reinforcement learning from human feedback shape model behaviour. The paper further explores the rapid growth in model scale over the past several years, common evaluation methodologies, and practical application domains such as content generation, software development, and education. Finally, the paper discusses persistent challenges, including hallucination, bias, computational cost, and the broader ethical and societal implications of deploying increasingly capable generative systems. The review is intended as an accessible entry point for readers seeking a structured overview of the field, its current state, and the questions that remain unresolved.

Keywords: Generative AI; Large Language Models; Transformer Architecture; Natural Language Processing; Machine Learning; Deep Learning; Artificial Intelligence Ethics

LIFELONG LEARNING AND EMPLOYABILITY

Ms. Anushya A.¹, Ms. Mubeenah², Ms. Suvitha P.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

The rapid pace of technological, economic, and organisational change has made a single phase of education insufficient to sustain a career. This paper examines lifelong learning as a continuous process of acquiring, updating, and applying knowledge and skills throughout an individual's working life, and its direct bearing on employability. Employability is treated here not as a fixed credential but as a dynamic capacity to obtain, retain, and progress in meaningful work as job requirements evolve.

Drawing on published research, labour-market reports, and institutional data, the study explores how continuous learning strengthens core employability skills such as digital literacy, critical thinking, communication, and adaptability. It also considers the barriers individuals and organisations face in embedding learning into everyday work, including time constraints, unequal access to training, and the cost of upskilling. The analysis finds that employees who engage in regular, structured learning are better positioned to move across roles and industries, while organisations that invest in workforce development see gains in retention and productivity.

The paper concludes that building an employable workforce for the future requires shared responsibility among individuals, employers, educational institutions, and policymakers. A coordinated approach to lifelong learning, one that is accessible, relevant, and continuously updated, is presented as central to sustaining employability in a labour market shaped by automation and rapid technological change.

Keywords:

Lifelong Learning, Employability, Reskilling, Upskilling, Continuous Professional Development, Career Adaptability, Workforce Development, Digital Literacy, Skill Gap, Labour Market

PUBLIC POLICY FOR SUSTAINABLE TECHNOLOGICAL DEVELOPMENT

Ms. Pacilica Xavier¹, Ms. Ashvika B. Jara V.²

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract

Technological change is unfolding at a pace few institutions were built to keep up with, reshaping economies, societies, and the natural environment in the process. Emerging fields such as artificial intelligence, renewable energy, biotechnology, and advanced manufacturing carry real promise for addressing pressing global problems, yet when their spread goes unmanaged, the results can include environmental strain, deepening inequality, and economic fragility. Public policy is the mechanism through which technological development can be steered toward outcomes that are environmentally sound, socially fair, and economically durable.

This paper examines the part public policy plays in supporting sustainable technological development, looking at how regulation, innovation incentives, environmental standards, and international cooperation together shape the way technologies are adopted across sectors. The study takes a qualitative, descriptive approach, drawing on academic literature, international policy reports, and publications from government and intergovernmental bodies. The evidence points to one central conclusion: sustainability-oriented policy works best as a combination of tools — regulatory instruments, market-based incentives, public R&D investment, and governance structures that bring industry, civil society, and academia to the same table.

The paper's broader argument is that market forces and technological progress on their own are not enough to deliver sustainable outcomes. What is needed instead is deliberate, coordinated, and adaptive policy that holds innovation and environmental stewardship in balance. Governments, international institutions, and private actors each have a role in building policy frameworks flexible enough to absorb fast-moving technological change while staying anchored to long-term sustainability goals.

Keywords

Public Policy, Sustainable Development, Technological Innovation, Environmental Regulation, Green Technology, Innovation Governance, Circular Economy, Climate Policy, Digital Transformation, Sustainability Standards

RENEWABLE ENERGY SYSTEMS AND GUIDES: A PRACTICAL FRAMEWORK FOR TECHNOLOGY SELECTION AND DEPLOYMENT

Mr. Akash S.¹, Mr. Hariprasath², Ms. Kashifa M.³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract

Systems of renewable energy have turned significant in the world as efforts are being made to decarbonise the electricity generation process, providing a reliable and cost-effective source of energy. This paper offers a pragmatic model for figuring out and deciding on the most significant renewable energy technologies of solar photovoltaic energy, onshore and offshore wind energy, hydropower, and bioenergy. The review explores the cost trends and operational features of the technologies in question and proceeds with discussing the implications of the scale of deployment on home, business, and electricity utility sectors. An example of the utilization of renewable energy sources for electricity generation is provided to illustrate the scale of contribution of various renewable energy sources in general. Another important point is the possible barriers of integration, such as the management of intermittency and degree of readiness of grids, the role of storage, and support of policies. This article was written as an operational tool to help those interested in getting acquainted with the process of selecting renewable energy technologies in order to meet the particular site and scale requirements.

Keywords: Renewable Energy; Solar Photovoltaic; Wind Energy; Hydropower; Bioenergy; Energy Storage; Sustainable Infrastructure

INNOVATION ECOSYSTEMS AND KNOWLEDGE TRANSFER: CONNECTING IDEAS, PEOPLE AND MARKETS

Mr. Reeman¹, Mr. Akbar Ali², Mr. Syed Abu Umer³, Mr. Hemachandiran M.⁴

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

⁴Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Innovation is rarely the product of just one company. It is often the result of a collaborative process involving universities, start-ups, established industries, public agencies and investors, some of whom offer something that others do not provide. This interconnected system is usually referred to as the innovation ecosystem, and the level of efficiency of this ecosystem in facilitating knowledge transfer, from a research laboratory to a startup or from one company to another, considerably affects the speed with which good ideas become products.

This study investigates the phenomenon of innovation ecosystems and their functioning with the help of various literature sources, including innovation agencies and university technology transfer offices. The results of the research show that the most favorable situations for an innovation ecosystem arise when there are transparent routes for knowledge transfers between the participants of the process, which can be licenses or joint projects or spin-off businesses.

The article mentions that establishing a robust innovation framework is more than merely backing research or providing help in isolation to startup companies. It shows that the innovation ecosystem integrates research with the support from the government, business partners, and investors to ensure smooth transition of innovation from the research laboratory to the market.

Keywords:

Innovation Ecosystems, Knowledge Transfer, Technology Transfer, Triple Helix Model, University-Industry Collaboration, Startups, Innovation Hubs, Intellectual Property Licensing, Research Commercialisation, Open Innovation.

SUSTAINABLE CONSUMPTION AND PRODUCTION: RETHINKING HOW WE MAKE, USE AND WASTE THINGS

Ms. Thaslin Farjana M.¹, Ms. Hemalatha S.², Mr. Mohamed Suhail³

¹Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

²Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

³Department of Computer Applications, Christ Arts and Science College, Puducherry, India.

Abstract:

Over the time period of the past decade, banks based on physical branches are being replaced with banking institutions that provide services through mobile devices as well as the internet. Known as 'fintech', this trend includes many services such as mobile payments, online loans, robo-advising, and currency transfers using blockchain technology. Despite being different technologies, all of them have the common goal of decreasing costs of transactions and making it easier for people to make payments without involving banks.

Beyond making life easier for bank clients, this development has more significant implications for developing countries where electronic payment systems allow people without access to banking become clients of financial institutions since they can use just their phone number and identity confirmation.

The paper is organized in the following way. The second section will give a brief summary of fintech evolution from its inception to the current state. The third section will explain the technology of electronic payments. Sections four and five will analyze trends in fintech usage in different countries and obstacles for fintech development.

Keywords:

Sustainable Consumption and Production (SCP), Circular Economy, Resource Efficiency, Responsible Consumption, Cleaner Production, Waste Reduction, Sustainable Development Goal 12, Supply Chain Sustainability, Environmental Impact, Behavioural Change.

TRANSDISCIPLINARY RESEARCH METHODOLOGIES: WORKING ACROSS THE BOUNDARIES OF A SINGLE FIELD

Ms. S. Sakthipriya

Assistant Professor, Department of Computer Applications, Christ Arts and Science College,
Puducherry, India.

Abstract:

Many of the complex difficulties faced by scientists i.e. climate adaptation, public health disparities or sustainable food systems, cannot fit precisely into an individual field of study. A climate scientist can model the rainfall data, but understanding the reasons why a farming community does or does not adapt to the rainfall variations requires economics, sociology and more often the knowledge of the community itself. Transdisciplinary research offers a structured way to cope with these issues because it is not about just introducing some methods borrowed from different fields.

This paper examines what transdisciplinary research methodology involves in practical applications, and how it differs from multidisciplinary or interdisciplinary approaches that are more commonly discussed. Drawing on published research and reports from institutions that study and fund transdisciplinary work, the paper examines core methodological elements such as co-design of research questions, joint knowledge production, and integration of academic and non-academic expertise. It also looks at what tends to support this kind of work and what tends to make it difficult, including institutional incentives that still reward single-discipline output, the time cost of building shared language across fields, and the challenge of evaluating research that does not fit neatly into one field's quality standards.

According to this journal, transdisciplinary methodology is not simply a toolbox but rather the practice of mediation between various knowledge forms. When transdisciplinary research succeeds, it produces work that is not only more informative but also applicable by those whose problems were being studied. The journal ends with suggestions on what has to change, namely funding mechanisms, academic context, and training, in order for transdisciplinary research to be easier to practice.

Keywords:

Transdisciplinary Research, Interdisciplinarity, Co-Production of Knowledge, Research Methodology, Knowledge Integration, Stakeholder Engagement, Complex Problems, Academic Collaboration, Participatory Research, Science-Policy Interface

**TECHNOLOGY-DRIVEN APPROACHES FOR ACHIEVING SUSTAINABLE
DEVELOPMENT GOALS (SDGs): THE ROLE OF ARTIFICIAL INTELLIGENCE
AND DIGITAL INNOVATION**

Mr. Gautam Krishna Mandal

Department of English, Christ Arts and Science College, Puducherry, India.

Abstract

The Sustainable Development Goals (SDGs), adopted by the United Nations in 2015, provide a global framework for addressing challenges such as poverty, inequality, climate change, quality education, and sustainable economic growth by 2030. Rapid advancements in Artificial Intelligence (AI), the Internet of Things (IoT), Big Data, cloud computing, and blockchain have transformed the way societies approach these challenges. These technologies improve decisionmaking, optimize resource utilization, and promote inclusive development across various sectors. This paper examines how technology-driven approaches contribute to achieving the SDGs while highlighting the ethical concerns and challenges associated with technological dependence. It concludes that innovation, when combined with responsible governance and digital inclusion, can significantly accelerate sustainable development.

Keywords: Sustainable Development Goals, Artificial Intelligence, Digital Innovation, Smart Technology, Sustainability.

GREEN SYNTHESIS OF HIGH-PURITY BIODEGRADABLE POLYMERS FOR ADVANCED BIOMEDICAL APPLICATIONS

Mr. Sasitharan S.¹, Mrs. Bharathi²

¹Department of Chemistry, Christ Arts and Science College, Puducherry, India.

²Assistant Professor of Chemistry, Christ Arts and Science College, Puducherry, India.

Abstract

The widespread use of conventional petroleum-based and metal-catalyzed synthesis for medical-grade biodegradable polymers poses significant risks due to residual toxic catalysts, volatile solvents, and non-biodegradable byproducts. These contaminants can lead to chronic inflammation, cytotoxicity, and environmental damage, undermining the clinical safety of implants and drug delivery systems. This study establishes a technical foundation for the green synthesis of high-purity biodegradable polymers using metal-free, bio-based pathways for advanced biomedical applications. We employed enzymatic ring-opening polymerization (eROP) using immobilized *Candida antarctica* Lipase B (Novozym 435) in supercritical carbon dioxide (scCO₂) or solvent-free conditions, with bio-derived monomers such as L-lactide and ϵ -caprolactone sourced from agricultural biomass.

Optimized reaction parameters of 65°C, 15 MPa, and 24 hours yielded poly(ϵ -caprolactone) with >96% monomer conversion, a number-average molecular weight (M_n) of $\sim 78,000$ g/mol, and a narrow polydispersity index of 1.24. Analytical characterization via GPC, ¹H-NMR, DSC, and ICP-MS confirmed zero detectable heavy metal residues and high structural uniformity. The resulting metal-free polymers exhibit predictable degradation into non-toxic byproducts such as lactic acid, CO₂, and water, eliminating the need for secondary surgical removal. This work demonstrates that green synthesis routes can match or exceed the performance of traditional methods while enabling safe, scalable production of biomaterials for targeted drug delivery and tissue engineering scaffolds. The findings provide a clear roadmap for transitioning medical polymer manufacturing toward sustainable, clinically viable processes.

Keywords: Green Synthesis, Biodegradable Polymers, Enzymatic Ring-Opening Polymerization, Biocatalysis, Supercritical CO₂, Biomedical Materials, Polyesters, PLA, PCL, Drug Delivery, Tissue Engineering, Metal-Free Catalysts, Sustainable Biomaterials.

Advanced AI Techniques for Sustainable chemical Industrial Waste Management: Methods, Applications and Future Directions for Environmental Pollution Control

Dr.P.Christuraj, Assistant Professor Christ Arts &Science College, Puducherry.

Abstract

The rapid growth of the chemical industry has resulted in increased generation of hazardous industrial waste, posing serious risks to environmental sustainability and public health. Traditional waste management methods often face challenges in waste identification, treatment efficiency, and pollution control. Advanced Artificial Intelligence (AI) techniques provide innovative solutions through intelligent monitoring, predictive analytics, and process optimization. This review explores the applications of machine learning, deep learning, reinforcement learning, computer vision, and digital twins in chemical industrial waste management. AI-based systems enhance waste classification, toxicity prediction, wastewater treatment, emission monitoring, and resource recovery while supporting circular economy practices. Integration of AI with the Internet of Things (IoT) enables real-time monitoring, early detection of hazardous leaks, and improved regulatory compliance. The review also discusses key challenges, including data availability, model interpretability, cybersecurity, and integration with existing industrial infrastructure. Future research should focus on explainable AI, hybrid AI models, digital twins, and standardized data-sharing frameworks to improve the scalability, reliability, and sustainability of AI-driven waste management systems. Overall, advanced AI technologies offer significant potential for reducing environmental pollution, improving resource efficiency, and promoting sustainable chemical industrial practices.

Keywords: Artificial Intelligence (AI); Chemical Industrial Waste Management; Machine Learning; Deep Learning; Internet of Things (IoT); Digital Twins; Environmental Pollution Control; Sustainable Development; Circular Economy; Resource Recovery.

SYNTHESIS, SPECTRAL CORRELATION ANALYSIS OF SOME SUBSTITUTED STYRYL -1-PYRYNEL KETONES

R.Arulkumaran^a, R.Sundararajan^a and G.Thirunarayanan^d

a,b: PG & Research Department of Chemistry, Govt Arts College, C.Mutlur, Chidambaram,
Tamil Nadu -608 102.

c:Department of Chemistry, Annamalai University, Annamalainagar 608 002

E-mail: rarulkumaran@gmail.com; drgtnarayanan@mail.com

ABSTRACT

About ten styryl 1-pyrynel ketone compounds have been synthesized from 1-acetylpyrene. They are characterized by analytical, ultraviolet, Infrared and NMR spectral data and correlated with Hammett substituent constants and *F* and *R* parameters using single and multi-linear regression analysis. From the results of statistical analysis, the effect of substituents on the above spectral data have been studied.

Artificial Intelligence in Language, Literature, and Digital Communication: Transforming Teaching, Research, and Human Interaction

Dr. B. SUMA SURESH M.A, M.Phil, Ph.D.,
Assistant Professor
Department of English
Christ Arts and science, Moolakulam, Puducherry, India
Email id- soniasuma7@gmail.com
Phone number – 9597215120

Abstract

Artificial Intelligence (AI) has emerged as a transformative force across the disciplines of language, literature, and digital communication. AI-powered technologies, including Natural Language Processing (NLP), Machine Learning (ML), Large Language Models (LLMs), and intelligent virtual assistants, have significantly influenced language teaching, literary research, content creation, and online communication. These technologies enhance personalized learning, facilitate multilingual communication, support computational literary analysis, and improve the efficiency of digital interactions. At the same time, AI raises important ethical concerns related to academic integrity, copyright, algorithmic bias, misinformation, and data privacy. This paper explores the multifaceted role of AI in language education, literary studies, and digital communication through a qualitative review of contemporary scholarly literature. It examines the opportunities, challenges, and future implications of AI in the humanities while emphasizing the continued importance of human creativity, critical thinking, and ethical responsibility. The study concludes that AI should function as a complementary tool that strengthens research, teaching, and communication rather than replacing human intellectual engagement.

Keywords: Artificial Intelligence, Language Learning, Literature, Digital Communication, Natural Language Processing, Digital Humanities.

**SPECTRAL CORRELATION STUDIES OF SOME SUBSTITUTED
2-TOSYL-(*E*)-1-(1-PHENYLETHYLIDENE) HYDRAZINES COMPOUNDS USING
SOLVENT FREE SYNTHESIS**

V.Manikandan^a, R.Arulkumaran^b, P.Christuraj^c and G.Thirunarayanan^d

a: Department of Chemistry, Shree Ragavendra Arts and Science College, Keezhamoongiladi, Chidambaram, Tamil Nadu -608 102.

b: PG & Research Department of Chemistry, Govt Arts College, C.Mutlur, Chidambaram, Tamil Nadu -608 102.

c: Department of Chemistry, Christ Arts and Science College, Moolakulam, Puducherry

d: Department of Chemistry, Annamalai University, Annamalainagar 608 002

E-mail: ymani147@gmail.com; drgtnarayanan@mail.com

ABSTRACT

Ten substituted 2-tosyl-(*E*)-1-(1-phenylethylidene) hydrazine compounds have been synthesized from 1-tosylhydrazine and benzaldehyde by solvent free method. The Silica sulphuric acid catalyst used for solvent free synthesis. They are conformed by TLC and various spectral data. The silica sulphuric acid catalyst method is greener method and the catalyst is reusable catalyst. The catalyst used for minimum amount to synthesis and pollution free method.

Phytochemical Characterization, Retrosynthetic Analysis, and Therapeutic Potential of *Trichodesma zeylanicum*

R. Manimaran, Research Scholar, Government Thirumagal Mills College, Gudiyatham.

This study focuses on the purification and comprehensive phytochemical analysis of *Trichodesma zeylanicum*. Gas chromatography-mass spectrometry (GC-MS) analysis identified a diverse array of compounds—including hydrocarbons, fatty acids, esters, alcohols, and sterols—with over 90% superimposability. The structural characterization of these isolates was validated through melting point analysis and standard phytochemical identification techniques. These findings establish *T. zeylanicum* as a significant botanical biofactory, exhibiting a sophisticated evolutionary strategy by modulating its secondary metabolites in response to seasonal cues. Building upon the GC-MS characterization, the current research phase actively employs retrosynthetic analysis for the identified plant metabolites. By systematically deconstructing these complex, naturally occurring target molecules into simpler, commercially available precursors, viable synthetic pathways are being mapped. Also studies will concentrate on *in silico* protein docking to analyze molecular interactions and microbial assays to evaluate the plant's clinical efficacy against pathogenic microorganisms.

GENERATIVE ARTIFICIAL INTELLIGENCE AND LARGE LANGUAGE MODELS: CONCEPTS, APPLICATIONS, CHALLENGES, AND FUTURE DIRECTIONS

Ms. M. SANTHIYA M.A.,

Assistant Professor

Department of English

Christ Arts and Science, Moolakulam, Puducherry, India

Email id – santhiyasathz@gmail.com

Phone no. 8695426242

Abstract

Artificial Intelligence (AI) has experienced remarkable progress over the past decade, with Generative Artificial Intelligence (Generative AI) emerging as one of the most significant technological innovations. Unlike conventional AI systems that primarily analyze and classify data, Generative AI is capable of creating original content, including text, images, audio, video, software code, and synthetic data. A major breakthrough within Generative AI is the development of Large Language Models (LLMs), which utilize transformer-based deep learning architectures to understand, interpret, and generate human-like language. These models have revolutionized various sectors by improving productivity, supporting decision-making, automating routine tasks, and enhancing human-computer interaction. Applications of Generative AI and LLMs span education, healthcare, finance, business, scientific research, software development, and public administration. Despite their transformative potential, these technologies raise important concerns related to bias, misinformation, privacy, intellectual property, cybersecurity, and ethical governance. This review paper examines the evolution of Generative AI and Large Language Models, their underlying concepts, major applications, benefits, challenges, ethical considerations, and future research directions. The study is based on secondary data collected from peer-reviewed journals, books, conference proceedings, and reports published between 2022 and 2026. The review concludes that while Generative AI and LLMs offer unprecedented opportunities for innovation and efficiency, their responsible development and deployment require robust governance frameworks, transparency, fairness, and human oversight. Continued research is essential to maximize their societal benefits while minimizing associated risks.

Keywords:

Artificial Intelligence, Generative AI, Large Language Models, Natural Language Processing, Deep Learning, Transformer Architecture.

Synthesis, Characterization, and Fluorescence Studies of Azobenzene-Based Monoboronic Acid Sugar Sensors

M Suresh

Department of Chemistry, MRG Arts College, Mannargudi, India.

Abstract

Sugar binding enhances fluorescence by strengthening the boron–nitrogen. Lewis acid–base interaction, which suppresses photo induced electron transfer and quenched emission. As a result, these systems exhibit enhanced fluorescence in neutral aqueous solutions upon sugar binding. The use of substituted aryl boronic acids as chelating agents for saccharides has drawn significant interest in designing novel sugar sensing approaches. Over the past decade, numerous fluorescent probes for monosaccharides based on boronic acids have been developed. Three new diphenylazo-based boronic acid compounds (1–3) were synthesized. The sensing performance of the synthesized compounds toward glucose and fructose was investigated using UV-visible spectroscopy, fluorescence, time-resolved fluorescence, pH studies, cyclic voltammetry, and ^1H NMR techniques. Upon the addition of sugars, changes were observed in both the absorption and fluorescence intensities of compounds 1, 2, and 3. The Benesi–Hildebrand plots yielded straight lines, indicating the formation of complexes between the sugars and the sensor molecules. The quantum yield and fluorescence lifetime values of the compounds in glucose and fructose media were higher than those in water, suggesting their sugar-sensing capabilities. At higher pH, the boronic acid group exists in its anionic form $[\text{B}(\text{OH})_3^-]$, leading to a change in the boron atom's configuration from sp^2 to sp^3 , thereby facilitating binding with sugar molecules. A possible sugar-sensing mechanism is proposed. The conversion of the boron atom from an sp^2 to an sp^3 configuration upon sugar binding is believed to cause the enhancement in fluorescence. Additionally, the observed increase in quantum yield and fluorescence lifetime confirms the interaction between the saccharide and probe molecules in the excited state.

Key word: Sugar Sensors, Azobenzene, Mono Boronic Acid Sugar, Fluorescence

Green synthesis, spectral and computational studies on Z-7-arylazo-3-isopropylbenzo[f][1,4]oxazepin-2(3H)-ones: A DFT approach*

Dr.N.Vijayalakshmi, V.Manikandan

Department of Chemistry, Shree Raghavendra Arts and Sciences College, Keezhamoongiladi, Chidambaram.

ABSTRACT

In this research Z-7-arylazo-3-isopropylbenzo[f][1,4]oxazepin-2(3H)-ones 3–7 are prepared and characterized by IR, ¹H, ¹³C and 2D NMR spectral studies. The structure of the compounds are optimized and computed by B3LYP density functional method calculations at 6-31G(d,p) basis set using Gaussian-03 software. The computed IR frequencies of the oxazepin-2(3H)-one 3 and its corresponding vibrational assignments were investigated by using potential energy distribution (PED%) computations by vibrational energy distribution analysis (VEDA) program. Dipole moment (μ), polarizability (α) and the first order hyperpolarizability (β_{tot}) are calculated. Stability of the compounds 3–7 have been studied by calculating the intramolecular charge transfer by means of natural bond order (NBO) analysis. The HOMO-LUMO energies and their energy gap and geometrical parameters were also calculated. Topological properties of the electronic charge density were computed by employing the Bader's atoms in molecular (AIM) theory, which employed the presence of van der Waals interaction in the molecules.

Keywords: Z-7-Arylazo-3-isopropylbenzo[f][1,4]oxazepin-2(3H)-ones; VEDA; DFT; NBO; NLOu

Generative Artificial Intelligence and Large Language Models: Transforming Higher Education, Research, and Digital Communication

Ms. ROUVIER PRAVEENA MARIE M.A, B.Ed., Assistant Professor Department of English
Christ Arts and Science, Moolakulam, Puducherry, India. Email id-
praveenajerush@gmail.com Phone no. 8531889924

Abstract

Generative Artificial Intelligence (GenAI) and Large Language Models (LLMs) have significantly transformed education, research, and digital communication. Powered by deep learning and transformer architectures, LLMs such as GPT, Gemini, Claude, and LLaMA generate human-like text, support multilingual communication, and facilitate content creation. In higher education, these technologies enhance teaching, personalized learning, academic writing, and research productivity. However, their rapid adoption raises ethical concerns, including plagiarism, bias, misinformation, privacy, and academic integrity. This paper explores the evolution of Generative AI and LLMs, their applications in higher education and research, opportunities and challenges, ethical considerations, and 2 future directions. It argues that responsible integration of AI, supported by institutional policies and AI literacy, can improve educational quality while preserving critical thinking and academic ethics.

Keywords: Artificial Intelligence, Generative AI , Language Models (LLMs)

GC-MS Analysis, Fluorescence Profiling, and Identification of Bioactive Compounds in *Capparis zeylanica* Linn.

V. Sabithra, *Research Scholar, Department of Botany, Government Thirumagal Mills
College, Gudiyatham, Vellore District, Tamil Nadu, India.*

Capparis zeylanica Linn. is a recognized medicinal plant valued for its diverse phytochemical composition and therapeutic potential. The present study was undertaken to evaluate the phytochemical profile, fluorescence behavior, and bioactive constituents of *Capparis zeylanica* using standardized analytical techniques. Gas Chromatography–Mass Spectrometry (GC-MS) analysis of the plant extract revealed the presence of major bioactive phytoconstituents responsible for its medicinal properties. Furthermore, fluorescence analysis of the powdered plant material under visible and ultraviolet (UV) light following treatment with various chemical reagents demonstrated characteristic diagnostic patterns, establishing valuable standardization parameters for pharmacognostic authentication and quality control. Key bioactive compounds were successfully isolated and partially characterized using chromatographic separation methods. Collectively, these findings validate the traditional therapeutic relevance of *Capparis zeylanica* and provide important analytical benchmarks for future botanical quality control and drug discovery initiatives.

The Impact of AI-Driven Online Reviews and Ratings on Consumer Purchase Behaviour: A Sustainable Digital Marketing Perspective

T. Jayasree
Research Scholar
Department of Commerce
(St. Joseph's college of arts and science (AUTONOMOUS) Cuddalore-1 /Annamalai
university)
jayathiru039@gmail.com

DR. A. Radhakrishnan
Assistant professor and guide
Department of Commerce
(St. Joseph's college of arts and science (AUTONOMOUS) Cuddalore-1 /Annamalai
university)

9003532393

Abstract

The rapid integration of Artificial Intelligence (AI) into digital marketing has transformed how consumers search for information, evaluate products, and make purchasing decisions. Among the most influential developments is the application of AI in online review and rating systems, where technologies such as machine learning, natural language processing, and sentiment analysis enhance the credibility, relevance, and personalization of consumer-generated content. AI-powered review systems enable consumers to process vast amounts of information efficiently by identifying authentic reviews, summarizing customer opinions, detecting fake reviews, and providing personalized recommendations. These capabilities not only reduce information overload but also strengthen consumer trust and confidence during the purchase decision-making process.

At the same time, sustainable digital marketing has emerged as a strategic approach that emphasizes transparency, ethical communication, customer engagement, and long-term relationship building. AI-driven online reviews support these objectives by improving information quality and encouraging responsible consumption. Despite the growing body of research on artificial intelligence, electronic word-of-mouth, and consumer behavior, limited conceptual studies integrate these concepts within the framework of sustainable digital marketing.

This conceptual paper examines the influence of AI-driven online reviews and ratings on consumer purchase behavior by synthesizing existing literature and proposing a theoretical framework grounded in the Technology Acceptance Model (TAM), Stimulus–Organism–Response (SOR) Theory, and Social Proof Theory. The proposed framework suggests that AI-enabled review characteristics influence perceived ease of use, perceived usefulness, consumer trust, and purchase intention, ultimately shaping consumer purchase behavior and contributing to sustainable digital marketing outcomes. The paper provides theoretical insights for

researchers and practical guidance for organizations seeking to implement ethical and AI-enabled marketing strategies.

Keywords: Artificial Intelligence, AI-Driven Online Reviews, Online Ratings, Consumer Purchase Behaviour, Sustainable Digital Marketing, Consumer Trust, Technology Acceptance Model

Synthesis of novel dispiro-acenaphthenone grafted dipyrroloperazine scaffolds through 1,3-dipolar cycloaddition of azomethine ylides

S. Shamala, Assistant Professor,

Department of Chemistry, Acharya college of engineering technology, Villianur, pudhucherry-605 110, INDIA.

Abstract

The synthesis of novel dispiro-acenaphthenone grafted dipyrroloperazine scaffolds was achieved through a 1,3-dipolar cycloaddition reaction involving azomethine ylides, providing a straightforward route to construct complex, three-dimensional molecular architectures with potential biological significance. This study utilized acenaphthenequinone as the core structural component, offering a rigid framework for subsequent cycloaddition reactions. Azomethine ylides were generated in situ by condensation of an amino acid with an aldehyde, facilitating the 1,3-dipolar cycloaddition with acenaphthenone in a regio- and stereoselective manner. The resulting dipyrroloperazine-fused dispiro compounds were purified and characterized using spectroscopic techniques, confirming the successful formation of highly constrained spirocyclic frameworks. The synthesized dispiro-acenaphthenone dipyrroloperazine scaffolds possess significant potential for further exploration in drug discovery due to their unique spatial configurations and functional moieties.

**Organic reactions in aqueous environments- Use of organic chemistry in the
development of nanomaterials**

Akash . S , Department of Chemistry Christ Arts and science college

Abstract :

Organic chemistry plays a pivotal role in advancing sustainable synthesis and materials science, particularly through reactions conducted in aqueous environments and the design of nanomaterials. This abstract examines the integration of aqueous organic reactions with nanomaterial development, highlighting how water, as a green and biocompatible solvent, influences reaction pathways, selectivity, and efficiency. Aqueous organic reactions leverage unique properties of water such as hydrophobic effects, hydrogen bonding, and enhanced reactivity to enable transformations with reduced environmental impact and improved functional group tolerance. These methods provide a foundation for the synthesis of organic ligands, polymers, and bio-inspired molecules under mild conditions. In parallel, organic chemistry is central to the development of nanomaterials through precise control over surface functionalization, self-assembly, and templated growth. Organic molecules act as capping agents, stabilizers, and linkers to direct nanoparticle size, morphology, and dispersibility in water. Conjugation strategies and click chemistry in aqueous media further enable the fabrication of hybrid organic-inorganic nanostructures for applications in catalysis, drug delivery, sensing, and energy storage. The convergence of aqueous organic synthesis and nanomaterial engineering thus offers a sustainable route to design functional nanomaterials with tailored properties. This approach addresses key challenges in scalability, biocompatibility, and environmental safety, positioning organic chemistry as a critical tool for next-generation nanotechnology.

Synthesis, Characterization, and Controlled Drug Release Studies of PVA/Curcumin/Wartsin Composite Films for Biomedical Applications

M. Ricky marion¹

1.Hindustan Institute of Technology & Science-Padur

Abstract

Curcumin is a promising natural therapeutic agent with potent anti-inflammatory, antioxidant, antimicrobial, and anticancer properties; however, its clinical application is limited by poor aqueous solubility, low bioavailability, and rapid degradation. In the present study, a PVA/curcumin/wartsin loaded composite film was developed as a controlled drug delivery system to enhance the therapeutic efficacy and sustained release of curcumin. The composite was prepared by the solvent casting method, in which PVA served as the biodegradable polymeric matrix, while curcumin and Wartsin were incorporated as bioactive agents. The prepared films were characterized using Fourier Transform Infrared Spectroscopy (FT-IR), X-ray Diffraction (XRD), Field Emission Scanning Electron Microscopy (FE-SEM), Energy Dispersive X-ray Spectroscopy (EDS), Thermogravimetric Analysis (TGA), and UV–Visible spectroscopy to evaluate their structural, morphological, thermal, and physicochemical properties. Drug release studies were carried out under different pH conditions to investigate the sustained release behavior of the composite system. The PVA-based matrix exhibited excellent film-forming ability, uniform drug distribution, and enhanced stability of the encapsulated bioactive compounds. The controlled release profile demonstrated prolonged drug availability, indicating its potential for localized and sustained therapeutic applications.

Green Synthesis of a Biopolymer/TiO₂/Flavanone Nanocomposite for Targeted Anticancer Drug Delivery

E. Sivaprakash¹, A. Therasa Alphonsa^{*1}

1.Government Arts college, B. mutlur-Chidambaram-608 102

Abstract

Targeted drug delivery using biopolymer–metal oxide nanocomposites offers an effective strategy to improve anticancer therapy while reducing systemic toxicity. In this study, a green-synthesized biopolymer/TiO₂/flavanone nanocomposite was developed as a sustainable and biocompatible drug delivery system. TiO₂ nanoparticles were synthesized using plant-derived phytochemicals and incorporated into a biodegradable biopolymer matrix containing flavanone to achieve controlled drug release. The nanocomposite was characterized by FT-IR, XRD, UV–Vis, FE-SEM, EDX, TEM, DLS, TGA, and DSC to confirm its structural and physicochemical properties. Drug loading, encapsulation efficiency, and in vitro release studies demonstrated sustained and pH-responsive drug release. Anticancer activity was evaluated using the MTT assay, while molecular docking and ADMET analyses supported the therapeutic potential and favorable pharmacokinetic profile of flavanone. The developed nanocomposite exhibited enhanced cytotoxicity, improved cellular uptake, and effective targeted drug delivery, highlighting its potential as a safe and eco-friendly platform for cancer treatment.

Empirical INT8 Quantization and CPU-Based Benchmarking of EfficientNet-B4 for Resource-Constrained Tomato Disease Diagnosis

A. Aravind

*Research Scholar, Department of Computer & Information Science
Annamalai University, Annamalai Nagar, Tamil Nadu, India
aravinth542003@gmail.com*

Dr. S. P. Senthilkumar

*Research Supervisor, Assistant Professor / Programmer
Department of Computer & Information Science, Annamalai University, Tamil Nadu, India
senthil.sp74@gmail.com*

Abstract

Deep learning models for plant disease diagnosis are almost always evaluated on classification accuracy alone, while their actual behaviour under deployment constraints - model size after compression, inference latency on ordinary hardware, and how much accuracy survives that compression - is left as an assumption borrowed from unrelated domains. This gap matters more than it is usually given credit for: a model that is 99% accurate in a Jupyter notebook is not automatically a model a farmer can run on a two-year-old Android phone. In earlier work, we trained an EfficientNet-B4 classifier on the ten-class PlantVillage tomato subset and reported 93.51% Top-1 accuracy (macro F1 = 0.9249, MCC = 0.9261), alongside a projected deployment footprint of roughly 19 MB and 150–300 ms of inference latency on a Raspberry Pi 4 - figures that, like most numbers of this kind in the literature, were estimated rather than measured. This paper replaces that estimate with a direct measurement. We take the trained checkpoint (18,476,370 parameters, 71.22 MB in our measured FP32 form) and apply PyTorch's post-training dynamic INT8 quantization, then benchmark the resulting model on the same held-out 2,403-image test set and on CPU-only inference. The result is not the result we expected going in, and we think that is exactly the point: size fell by only 3.7% and latency improved by a negligible 1.01×, because dynamic quantization in its default form only touches Linear layers, and EfficientNet-B4 - like most modern CNNs - is a network built almost entirely out of convolutions. Accuracy held essentially steady (93.42% Top-1, a drop of 0.08 percentage points), which confirms the technique is safe, just not useful in this configuration. We report per-class F1 changes, latency distributions, and a discussion of why architecture family - not just precision format - determines whether quantization delivers on its usual promises, closing with concrete recommendations for researchers who cite compression figures without checking whether they transfer to convolutional networks.

Keywords: *EfficientNet-B4, INT8 Quantization, Model Compression, Edge Deployment, Tomato Disease Classification, PlantVillage, CPU Inference, Precision Agriculture*

DISEASE PREDICTINON FROM PATIENTS USING DATA ANALYTICS

¹Mr.A.Ravi , ²Mr. M.Vishal

¹Assistant Professor, Department of Computer Science,

²Student 2nd Year MSc Computer Science Department

¹Agurchand Manmull Jain College, Chennai-61, India

MailL ravi.a@amjaincollege.edu.in

²Agurchand Manmull Jain College,
Chennai-61, India

MailLvm7788215@gmail.com

ABSTRACT

Healthcare data analytics revolutionizes patient care by predicting disease outcomes early, tailoring personalized treatment plans, and optimizing resource allocation based on risk profiles. Proactive care through remote monitoring, efficient operations, and targeted preventive measures contribute to improved outcomes. The system supports clinical decision-making, quality improvement, and cost control, while fostering innovation in healthcare research. This data- driven approach aims to make healthcare more patient-centered, efficient, and responsive to evolving challenges.

An Overview of Digital media design in AI Driven analytics

¹Dr. S. Sasikala , ²Ms. D. Premalatha

¹Assistant Professor, Department of Computer Science,

²Student 2nd Year BSc 'B' Computer Science Department

¹Agurchand Manmull Jain College, Chennai-61, India

MailL sasikala,s@amjaincollege.edu.in

²Agurchand Manmull Jain College, Chennai-61, India

MailL imprema2007@gmail.com

Abstract

Digital media interaction design mainly focuses on the user's interactive experience in the digital media environment. By designing interaction methods that conform to human cognition and behavioral habits, it improves the efficiency and comfort of user interaction with digital devices. Its development history can be traced back to the early stage of computers and the Internet. With the development of graphical user interfaces, mobile Internet and intelligent devices, the application scenarios of digital media interaction design are increasingly rich, and the design complexity is also increasingly high. The innovation of this article lies in combining the GOMS model with execution level quantitative optimization techniques to construct a new optimization model. This model can not only accurately describe the user's operational behavior on digital media mobile terminals, but also quantitatively evaluate the interface's interaction efficiency and user experience. By collecting and analyzing real-time user data during task execution, this model can optimize various aspects such as interface layout, button size, and interaction flow, thereby improving user operational efficiency and satisfaction. In terms of application in the design of digital media mobile terminal interfaces, this optimization model demonstrates significant advantages.

Keywords Digital media · Human-computer interaction · Interface design; gesture recognition

Vision-based Sign Language Translation System Using Artificial Intelligence

¹Dr. R. Bhuvana , ²Mr.H.Bhuvaneshwar

¹Assistant Professor, Department of Computer Science,

²Student 2nd Year BSc 'B' Computer Science Department

¹Agurchand Manmull Jain College, Chennai-61, India MailL
bhuvana.r@amjaincollege.edu.in

²Agurchand Manmull Jain College, Chennai-61, India MailL
bhuvanehwarh15@gmail.com

ABSTRACT

Sign language is a vital mode of communication for individuals with hearing and speech impairments. However, the lack of widespread understanding of sign language among the general population creates a significant communication barrier. This project, titled "Vision- Based Sign Language Translator System Using Artificial Intelligence," aims to bridge this gap by developing an intelligent system capable of recognizing hand gestures and translating them into meaningful text and speech in real time. The proposed system utilizes computer vision and machine learning techniques to detect and interpret hand gestures. Real-time video input is captured through a camera, and hand landmarks are extracted using the Media Pipe framework. These landmarks are then processed and fed into a trained machine learning model to predict corresponding alphabet gestures. The predicted alphabets are sequentially combined to form words, enabling continuous and meaningful communication.. To enhance accuracy and usability, an automatic text correction mechanism is implemented using the Text Blob library, which refines the generated words by correcting possible spelling errors. Furthermore, the system integrates a voice output feature using the pyttsx3 library, converting the corrected text into audible speech, thereby improving accessibility for users. The system is trained using the Sign Language MNIST dataset, which provides labelled hand gesture images for model learning. Performance evaluation is conducted using metrics such as accuracy and loss, ensuring the reliability of predictions. This project demonstrates an effective and efficient approach to real-time sign language translation, offering a practical solution to improve communication between differently-abled individuals and the broader community. The system is scalable and can be further enhanced to support full sentence recognition and multilingual translation in future developments.

**From Artificial Intelligence to Artificial Wisdom (AI²): Designing Ethical AI for
Humanity's Future**

Mothik k
II Year,
Department of Computer
Applications,
Rajiv Gandhi Arts and
Science College,
Thavalakuppam,
Pondicherry, INDIA.

Dr. J. Hannah Monisha,
Assistant Professor,
Department of Computer
Applications,
Rajiv Gandhi Arts and
Science College,
Thavalakuppam,
Pondicherry, INDIA.

Dhurkesh alas Daniel P
II Year,
Department of Computer
Applications,
Rajiv Gandhi Arts and
Science College,
Thavalakuppam,
Pondicherry, INDIA

Abstract

Artificial Intelligence (AI) has transformed modern society by enabling automation, predictive analytics, intelligent decision-making, and autonomous systems across diverse domains. However, the rapid evolution of AI has raised critical concerns regarding fairness, transparency, accountability, privacy, bias, and societal impact. Current AI systems excel in processing data and identifying patterns but often lack ethical reasoning, contextual understanding, empathy, and moral judgment. This limitation highlights the need to move beyond conventional Artificial Intelligence toward **Artificial Wisdom (AI²)**, a paradigm that integrates human values, ethical principles, emotional intelligence, and sustainable decision-making into intelligent systems. This paper introduces the AI² framework, which combines Explainable AI (XAI), Responsible AI, Human-Centered AI, and Ethical Governance to create intelligent systems capable of making socially beneficial and ethically responsible decisions. The proposed framework emphasizes transparency, accountability, fairness, sustainability, and continuous human oversight while maintaining hig

h computational efficiency. Furthermore, the paper discusses the architecture, applications, challenges, comparative analysis, and future research directions of Artificial Wisdom. The proposed AI² model aims to bridge the gap between intelligence and wisdom, ensuring that future AI systems serve humanity responsibly while supporting sustainable development and global ethical standards.

Keywords— Artificial Intelligence, Artificial Wisdom, Ethical AI, Explainable AI, Responsible AI, Human-Centered AI, AI Governance, Sustainable AI.

GreenMind AI: Carbon-Aware Artificial Intelligence for a Net-Zero Future

Hilary

II Year,
Department of Computer
Applications,
Rajiv Gandhi Arts and
Science College,
Thavalakuppam,
Pondicherry, INDIA.

Dr.S.Sutha,

Assistant Professor,
Department of Computer
Applications,
Rajiv Gandhi Arts and
Science College,
Thavalakuppam,
Pondicherry, INDIA.
drrevathyap@gmail.com

Dr.K.Sathiya,

Assistant Professor,
Department of
Mathematics,
Rajiv Gandhi arts and
science
College,Thavalakuppam,
Pondicherry,INDIA

Abstract

Artificial Intelligence (AI) has become a transformative technology across numerous sectors, including healthcare, education, transportation, agriculture, manufacturing, and smart cities. Despite its remarkable advancements, AI systems require significant computational power, leading to increased electricity consumption and carbon emissions from data centers. Large-scale AI models consume enormous amounts of energy during training and deployment, creating environmental concerns that challenge global sustainability goals. GreenMind AI introduces a carbon-aware intelligent framework that minimizes environmental impact while maintaining AI performance. The proposed framework integrates renewable energy utilization, carbon-aware scheduling, dynamic workload allocation, energy-efficient neural networks, and intelligent resource optimization to reduce greenhouse gas emissions generated by AI infrastructures. GreenMind AI continuously monitors carbon intensity, energy consumption, and computational workload to schedule AI tasks at locations and times with lower carbon footprints. The framework also incorporates lightweight deep learning models, edge computing, model compression, and adaptive resource management to improve energy efficiency. This paper discusses the architecture, methodologies, applications, challenges, and future directions of Carbon-Aware Artificial Intelligence for achieving a sustainable Net-Zero future. The proposed framework demonstrates how intelligent computing can significantly reduce carbon emissions while preserving computational efficiency, making AI both environmentally responsible and economically sustainable.

Keywords— Green Artificial Intelligence, Carbon-Aware Computing, Sustainable AI, Green Computing, Net-Zero AI, Renewable Energy, Energy-Efficient Machine Learning, Carbon Footprint Optimization.

Neuro-Symbolic AI: The Next Generation of Explainable and Trustworthy Artificial Intelligence

P.Rekha

III Year,
Department of Computer
Applications,
Rajiv Gandhi Arts and
Science College,
Thavalakuppam,
Pondicherry, INDIA.

S.Rantheep Raja

Assistant Professor,
Department of Computer
Applications,
Rajiv Gandhi Arts and
Science College,
Thavalakuppam,
Pondicherry, INDIA

R.Monica

III Year,
Department of Computer
Applications,
Rajiv Gandhi Arts and
Science College,
Thavalakuppam,
Pondicherry, INDIA

Abstract

Artificial Intelligence (AI) has rapidly evolved through deep learning, enabling remarkable achievements in image recognition, natural language processing, autonomous systems, and scientific discovery. Despite these advances, most deep neural networks operate as "black-box" models, making their decisions difficult to interpret and validate. This lack of transparency limits the adoption of AI in high-stakes domains such as healthcare, finance, law, and autonomous transportation, where explainability, fairness, and accountability are essential. Neuro-Symbolic Artificial Intelligence (Neuro-Symbolic AI) has emerged as a promising paradigm that combines the pattern-recognition capabilities of neural networks with the logical reasoning and knowledge representation strengths of symbolic AI. This integration enables AI systems to learn from data while simultaneously reasoning with explicit knowledge, thereby producing more transparent, trustworthy, and explainable decisions. This paper presents a comprehensive overview of Neuro-Symbolic AI, highlighting its architecture, workflow, core components, applications, and advantages over conventional AI approaches. A novel conceptual framework integrating neural perception, symbolic reasoning, explainability, and trust evaluation is proposed to support ethical and reliable AI systems. Comparative analysis demonstrates that Neuro-Symbolic AI improves explainability, robustness, and decision transparency while maintaining competitive predictive performance. The paper concludes with future research directions emphasizing scalable reasoning, continual learning, and trustworthy AI governance.

Keywords— Neuro-Symbolic AI, Explainable Artificial Intelligence (XAI), Symbolic Reasoning, Knowledge Graphs, Deep Learning, Trustworthy AI, Hybrid Intelligence, Responsible AI.

AI-Powered Browser Protection Against Phishing Attacks

P. Revathy Assistant Professor

Department of Computer Application

Rajiv Gandhi Arts and Science College

B. Barathkumar 2nd Year

Department of Computer Application

Rajiv Gandhi Arts and Science College

K. Hemasri 2nd Year

Department of Computer Application

Rajiv Gandhi Arts and Science College

Abstract:

The primary objective of this research is to propose an **AI-Powered Browser Protection Against Phishing Attacks** that enhances user security by detecting and preventing phishing websites before sensitive information is compromised. The study explores the integration of artificial intelligence into web browsers to provide proactive, intelligent, and user-friendly protection against evolving cyber threats while improving online browsing safety. Phishing attacks have become one of the most prevalent cybersecurity threats, exploiting fake websites to deceive users into revealing confidential information such as usernames, passwords, banking credentials, and personal data. Traditional browser security mechanisms and rule-based detection methods often struggle to identify newly emerging phishing techniques, making users vulnerable to sophisticated and continuously evolving attacks. This paper proposes an AI-powered browser protection

Approach that analyzes website characteristics, URL patterns, webpage content, and other security indicators to identify potentially malicious websites. Based on the analysis, the system provides real-time security warnings, enabling users to make informed decisions before interacting with suspicious webpages. The proposed solution also discusses the future integration of adaptive AI models capable of continuously learning from newly identified phishing attacks to improve detection accuracy and enhance browser security. The proposed research demonstrates the potential of artificial intelligence to strengthen browser security by providing proactive phishing detection and increasing user awareness. This study contributes to the advancement of AI-driven cybersecurity solutions and establishes a foundation for future intelligent browser protection systems capable of defending against increasingly sophisticated phishing attacks.

Keywords: Artificial Intelligence, Cyber Security, Phishing Attacks, Browser Security, Browser Protection, AI-Based Detection.

H^1 AND C^{13} NMR SPECTRAL INTERPRETATION OF USNIC ACID

R. Ranjani

UG Graduate

Medcode Services, Ekkatuthangal

No. T/S 125, Thiruvika Industrial Estate,

North Phase, SIDCO, Sai Sadhan,

Chennai – 600032

Dr. R. Ananthi, M.Sc., Ph.D.

✉ Email: hemabalahemabala402@gmail.com

Phone no: 9629911902

Abstract

Lichens are unique symbiotic organisms consisting of a fungal partner (mycobiont) and a photosynthetic partner (photobiont), and they are well known for producing a wide range of biologically important secondary metabolites. The present study focuses on the isolation and spectral characterization of usnic acid, a major lichen secondary metabolite obtained from the fruticose lichen *Usnea implicata*. The air-dried lichen material was extracted with acetone under reflux conditions, and the resulting extract was concentrated and subjected to thin-layer chromatography (TLC). A single compound was isolated and identified as usnic acid based on its chemical properties, melting point, ferric chloride reaction, acetylation studies, co-TLC, and mixed melting point comparison with an authentic sample. The structural characterization of the isolated compound was further supported by 1H NMR and ^{13}C NMR spectral analysis in $DMSO-d_6$, which provided valuable information regarding the proton and carbon environments of the molecule. The study highlights the significance of NMR spectroscopy in the structural elucidation of naturally occurring lichen metabolites. Usnic acid, a depsidone-type compound, is of considerable scientific interest due to its reported antimicrobial and other biological activities. The findings contribute to the chemical investigation of lichen-derived natural products and emphasize their potential importance in natural product research.

ABOUT THE INSTITUTION

Christ Arts and Science College (CASC), Moolakulam, Puducherry, is a premier institution established under the aegis of the Sam Paul Educational Trust, founded in 2004 with the vision of providing quality and affordable education. Over the years, the Trust has evolved into a distinguished educational group comprising multiple institutions, contributing significantly to higher education in Puducherry.

Established in 2022 and affiliated with Pondicherry University, Christ Arts and Science College offers undergraduate and postgraduate programmes across Arts, Science, Commerce, and Management. The institution is committed to academic excellence, innovation, value-based education, and holistic student development. With experienced faculty, modern infrastructure, industry-oriented training, and strong placement support, the college prepares students to become competent professionals, responsible citizens, and lifelong learners.

ABOUT THE CONFERENCE

The Three Days International Conference on "Innovating for Impact: AI-Driven Pathways Integrating Science, Business, and Humanities for a Sustainable Future" aims to provide an interdisciplinary platform for academicians, researchers, industry experts, professionals, and students to exchange ideas, present innovative research, and discuss emerging trends in Artificial Intelligence and sustainable development.

The conference focuses on fostering collaboration among the domains of Science, Business, and Humanities, encouraging knowledge sharing, innovation, and practical solutions to address contemporary global challenges. Participants will have the opportunity to present original research, engage with leading experts, establish academic and industrial collaborations, and contribute towards building a sustainable, technology-driven future. Selected papers will be published in the conference proceedings with an International ISBN.

ABOUT THE PUBLICATIONS

Aarambh Quill Publications, a distinguished unit of S-net Solutions, is dedicated to fostering academic excellence through high-quality publishing. We specialize in providing a platform for scholars, researchers, and educators to showcase their expertise, ensuring their work reaches a broad and impactful audience. With a deep understanding of the rigorous effort and dedication involved in scholarly writing, we are committed to delivering exceptional academic publications across various domains.

 ***PUBLISH YOUR BOOK TODAY!***



www.aarambhquill.in | editor@arambhquill.in

ISBN 978-93-6068-452-5



9 789360 684525