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SYMPOSIUM 2026 SAMANVAY 1.0 TRANSFORMATIVE RESEARCH IDEAS TO COMPETE GLOBALLY



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Symposium 2026: Samanvay 1.0 Transformative Research Ideas to Compete Globally

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FROM THE DESK OF THE DIRECTOR



It gives me immense pleasure to present the **inaugural Symposium Samnvaya 1.0**, a significant step towards fostering a vibrant research culture within our institution. It is a commendable initiative that provides a platform for students to showcase their research ideas, creativity, and academic excellence.

At DES's NMITD, we are committed to nurturing young minds through quality education, fostering innovation, and encouraging a culture of research and lifelong learning. This symposium is a reflection of our continuous efforts to promote intellectual curiosity and collaborative growth among students. I appreciate the dedicated efforts of the organizing committee, faculty members, and the editorial team for their hard work in making this event a success.

Wishing everyone continued success in their academic and research endeavors.

Dr. Rasika Mallya
Director in Charge DES's NMITD

FROM THE EDITORIAL TEAM

We are proud to present with great enthusiasm, we bring forth the idea compilation of ***Symposium Samnvaya 1.0***, celebrating the spirit of research, creativity, and academic exploration.

This compilation of abstracts showcases the diverse ideas, scholarly efforts, and research excellence demonstrated by the participants. It stands as a testament to the curiosity, creativity, and commitment of budding researchers.

We extend our sincere appreciation to all contributors for their valuable submissions, and express our gratitude to the organizers and reviewers for their unwavering support and meticulous efforts in shaping this symposium.

We hope this collection inspires further research and meaningful discussions.

May the quality education at DES's NMITD inspire young computing minds, nurture a spirit of innovation and enterprise, and instil in our students a strong sense of ethical living.

Editorial Team
Samnvaya 1.0

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INFLUENCE OF SHORT-FORM VIDEO CONTENT (REELS/SHORTS) ON BRAND AWARENESS AMONG DIGITAL CONSUMERS

Mr. Akshit joshi

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ABSTRACT:

In the past few years, the rapid growth of short-form video content on platforms such as Instagram Reels, YouTube Shorts has significantly transformed the way brands communicate with consumers. These platforms deliver quick, engaging, and highly visual content that captures attention within seconds, making them an increasingly powerful marketing tool. As digital consumers spend more time consuming short videos, businesses are shifting their marketing strategies to leverage this format in order to build stronger brand recognition and connect with audiences more effectively. This research study aims to examine the influence of short-form video content on brand awareness among digital consumers. The study explores how elements such as creativity, entertainment value, relatability, and frequency of exposure in short videos affect consumers' ability to recognize, recall, and engage with brands. Unlike traditional advertising formats, short-form videos often blend entertainment with marketing messages, making brand promotion appear more natural and less intrusive to viewers.

The research focuses particularly on digital consumers who actively use social media platforms where short-form videos dominate content consumption. Through survey-based data collection and analysis, the study intends to understand how viewers perceive brand messages embedded in reels or shorts, and whether such exposure leads to stronger brand recall compared to other digital advertising formats. Additionally, the research will explore how algorithm-driven content discovery and influencer participation further amplify brand visibility.

Preliminary observations suggest that short-form videos have the potential to enhance brand awareness by delivering memorable content that encourages sharing, engagement, and repeated exposure. The interactive nature of these platforms also allows consumers to quickly respond to and interact with branded content through likes, comments, and shares, which may further expand the reach of a brand's message. However, the effectiveness of this format largely depends on the authenticity and creativity of the content, as audiences tend to respond more positively to relatable and entertaining material rather than overt promotional messaging.

The findings of this research aim to contribute to the growing body of knowledge on digital marketing and consumer engagement. By understanding how short-form video content influences brand awareness, marketers and businesses can design more effective strategies that align with the changing patterns of online content consumption. Ultimately, this study seeks to

highlight the evolving role of short-form video platforms in shaping modern branding practices and influencing consumer perceptions in the digital marketplace.

KEYWORDS: Digital Consumers, Social Media, Brands Communication.

NEETI: THE SIGNIFICANCE OF ETHICAL BEHAVIOUR IN TODAY'S WORLD

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ABSTRACT:

Today, the world is facing several serious ethical challenges such as corporate scandals, corruption, greed, unhealthy competition, drug abuse, and declining self-control in society. These issues indicate that ethical values are gradually weakening among both individuals and organizations. Many modern systems of ethics mainly focus on external mechanisms such as rules, regulations, laws, and profit control. While these systems attempt to regulate behaviour, they often fail to develop strong internal moral values within individuals.

Recent global data further highlights the seriousness of this issue. According to the Corruption Perceptions Index, which evaluates corruption across more than 180 countries, the global average corruption score is around 42 out of 100, and 122 countries score below 50, indicating widespread corruption and weak ethical governance worldwide. Furthermore, illicit financial flows caused by corruption, bribery, and misuse of public power are estimated to cost developing countries around 1.3 trillion US dollars annually. This demonstrates the significant economic and social damage caused by unethical practices. In this context, the present research explores how principles from Traditional Indian Philosophy, particularly the teachings of the Bhagavad Gita and the Upanishads, can contribute to addressing modern ethical challenges. The study proposes a 5D Ethical Model based on traditional moral values. This model includes Dharma (moral duty), Nishkama Karma (selfless action), Satya (truthfulness), Raj Dharma (ethical leadership), and Artha (ethical pursuit of wealth).

The research compares modern ethical behaviour with the ethical framework provided by Traditional Indian Philosophy. It argues that many contemporary problems arise when wealth (Artha) and personal desires are pursued without the guidance of moral duty (Dharma). When financial gain and individual interests dominate ethical considerations, it often leads to corruption, unethical decision-making, and social imbalance. Additionally, the research suggests integrating this 5D Moral Model into Artificial Intelligence systems, particularly Large Language Models (LLMs). By incorporating these ethical guidelines into AI structures, LLMs can generate responses that are not only factually correct but also ethically sound and morally consistent. Such systems can help users make better decisions and provide ethically informed solutions to modern societal and technological challenges. The study concludes that integrating values from Traditional Indian Philosophy into leadership, corporate governance, everyday decision-making, and emerging technologies like AI can strengthen honesty, accountability, self-discipline, and sustainable long-term development. These philosophical

principles provide a practical framework for promoting ethical conduct and creating a more balanced and responsible modern society.

KEYWORDS: Ethics, Artificial Intelligence, Technological Challenges.

IMPACT OF BEHAVIOURAL BIASES ON STOCK MARKET INVESTMENT DECISIONS

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ABSTRACT:

The traditional viewpoint for investors in the stock market has been that they are rational thinkers/actors. However, in practice, many decisions made by retail/individual investors can also be influenced by factors such as their own behaviours (e.g., overconfidence) or behaviours of others (e.g., herding behaviour). This research looks to understand how these biases affect the way retail/individual investors decide to invest in the stock market by examining the following behavioural biases: Overconfidence; Loss Aversion; Herd Behaviour; Anchoring.

It is an exploratory, descriptive research design and is based on the collection of both primary data using a structured questionnaire and secondary data from academic journals and financial reports. The research results indicate that there is a large influence of behavioural biases on how retail/individual investors act when making their investment decisions, with many retail/individual investors trading excessively and/or holding on to losing investments for long periods of time without having first done sufficient research.

The research results also highlight that being aware of one's behaviour and understanding how to develop one's financial literacy are essential to retail/individual investors making more rational investment decisions and ultimately resulting in improved investment results.

KEYWORDS: Investment Decision, Stock Market, Financial Literacy.

THE "FINANCIALIZATION" OF HOUSEHOLD SAVINGS A COMPARATIVE STUDY OF PHYSICAL VS. FINANCIAL ASSETS

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ABSTRACT:

For decades, Indian households have preferred investing their savings in physical assets like gold and real estate. These investments were seen as safe and secure. Gold has cultural significance in India, while real estate has long been a symbol of wealth and long-term stability. However, in recent years, there has been a noticeable shift in how households invest. Urban investors, especially in cities like Mumbai, are increasingly choosing financial assets like mutual funds, particularly through Systematic Investment Plans (SIPs). This change shows the growing trend of financializing household savings in India.

This study aims to look at the changing investment patterns among urban households in Mumbai. It focuses on comparing physical assets such as gold and real estate with financial assets like mutual funds through SIPs. The study seeks to understand the reasons for this shift. It explores key factors like return expectations, liquidity, affordability, risk tolerance, tax benefits, and transparency. It also examines how digital investment platforms, financial literacy apps, and social media have influenced modern investment choices.

In the past decade, new technology and the rapid rise of fintech platforms have made investing in mutual funds easy and convenient. Mobile apps, online KYC processes, and low minimum investment amounts have lowered barriers for small investors. Additionally, growing financial awareness campaigns and educational content on digital platforms have improved investors' understanding of risks and returns. As a result, urban households are feeling more comfortable with market-linked investments compared to traditional physical assets.

KEYWORDS: Investment Preference, SIPs, Financial Awareness.

THE GREEN CLOUD COMPUTING GAP: UNDERSTANDING BARRIERS TO SUSTAINABLE AUTO-SCALING ADOPTION

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ABSTRACT:

Background: Cloud computing has become essential to modern digital infrastructure, but its environmental impact is significant and growing. According to the International Energy Agency (IEA), data centers consume roughly 1.5–2% of global electricity. In 2024, data centers accounted for approximately 415 terawatt-hours (TWh) of consumption, projected to reach 945 TWh by 2030. Data center electricity consumption is growing at 12% annually, four times faster than total electricity demand. Auto-scaling, the automatic adjustment of compute resources, is critical for cloud operations, yet organizations typically configure it with simple policies (e.g., scale at 70% CPU), resulting in overprovisioning and wasted resources.

The Problem: A 10% load increase often triggers launching entirely new instances, which may run at 20–30% utilization. This wastes electricity, increases carbon footprint, and costs money unnecessarily. While more efficient scaling strategies exist and are known to researchers, adoption remains slow. This disconnect between available solutions and actual practice is the core research problem.

Research Gap: Limited empirical research investigates WHY organizations do not adopt known sustainable practices. The gap is not technical, solutions exist. It is behavioral and organizational: What prevents teams from implementing practices they know would improve efficiency?

Contribution & Broader Impact: This research illuminates WHY sustainable practices aren't adopted, enabling design of effective tools, policies, and organizational changes. As data center energy consumption accelerates globally, understanding adoption barriers is essential for organizations, tool vendors, researchers, and policy makers seeking to reduce cloud computing's environmental impact. By establishing empirical evidence of the theory-practice gap, this study contributes actionable insights to the emerging field of Green Cloud Computing.

KEYWORDS: Green Cloud Computing, Auto-Scaling, Cloud Sustainability, DevOps, Technology Adoption, Barriers.

EKTA NIVAS: A RESEARCH FOR ELDERLY CARE SERVICES

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ABSTRACT:

The number of elderly people living alone is increasing as many children move to other cities or countries for work. This often leads to loneliness, lack of regular medical care, and difficulty in managing daily activities for senior citizens. This research focuses on the need for reliable and organized elderly care services that can support older adults living independently.

The study analyses reports, research papers, and existing elder care models to understand the challenges faced by the aging population in India. It identifies gaps in current elder care services and the growing demand for better support systems.

Based on the findings, the research proposes Ekta Niwas, a concept for an assisted living service that provides medical support, daily assistance, and social activities for senior citizens. Such services can improve the health, safety, and emotional well-being of elderly people while also giving peace of mind to their families.

KEYWORDS: Ekta Niwas, Elder Care Models, Social Activities.

EFFECT OF SOCIAL MEDIA MARKETING ON BUYING BEHAVIOUR AMONG GENERATION Z: A GENDER BASED STUDY

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ABSTRACT:

The quick development of social media and digital technologies which has drastically changed how sectors interact with the consumers. Social media which has become one of the most powerful marketing strategies which is used by most of the companies to advertise their products and services among a variety of digital platforms. Through advertisement, partnership with influencers and social media platforms like Instagram, Facebook and YouTube which share promotional content and impact purchase decisions. Generation Z customers are especially vulnerable to marketing messages supplied through social media channels because involvement of digital preferences is at high level.

With an emphasis on gender based inequality, the current study aims to research how Generation Z consumers purchasing decisions are affected by social media marketing. The study investigates how many aspects of social media marketing, such as ads, influencer promotions, fashion related visual content, and activities related to the promotion, influence young consumers' decisions to buy. Furthermore, the study aims to ascertain whether male and female consumers react differently to social media marketing initiatives when making purchases.

A research design created for the study. Primary data was collected through a structured questionnaire which was distributed online on social platform. The population targeted was Generation Z consumers aged between 18 and 27 years who actively use social media platforms. In total, 77 valid responses were collected and analyzed for understanding the patterns of consumer behaviour. 49% males and 51% females were respondents for the survey.

Overall, this study highlights the importance of growing social media marketing in consumer behaviour shaping among genZ

KEYWORDS: Social Media Marketing, Generation Z, Gender Based Study, Consumer Buying Behaviour.

THE FARMER'S NEW PARTNER

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ABSTRACT:

For generations, farming has been a game of chance.

Farmers have relied on their gut feelings, the wisdom passed down from their parents, and a quick glance at the sky to determine when to plant or harvest. However, the world is changing rapidly. With unpredictable weather, exhausted soil, and an increasing population to feed, the old methods of "guessing" are no longer sufficient. This is where Artificial Intelligence (AI) comes in—not to replace the farmer, but as a powerful new partner.

This paper explores how AI is transforming the decision-making process for farmers.

At its core, AI is about converting vast amounts of information into practical and useful advice. In the past, a farmer might observe one field and make a decision for the entire season. Today, AI utilizes data from satellites, drones, and small sensors in the soil to provide farmers with precise insights about every part of their land. One of the most significant benefits is improved timing. By analyzing decades of weather trends and current satellite images, AI can advise farmers on the optimal day to sow seeds, helping them avoid unexpected dry spells or heavy floods. It eliminates the element of uncertainty.

Another major change lies in how crops are treated. Traditionally, if a farmer notices pests, they might spray the entire field with chemicals. This approach is costly and harmful to the environment. AI-powered cameras can now identify which individual plants are diseased, allowing farmers to apply medicine or fertilizer only where needed. This reduces expenses, preserves soil health, and results in cleaner food. Beyond the fields, AI supports the business aspects of farming. It monitors market prices and helps farmers choose the best time to sell their crops, ensuring they are not shortchanged by low prices.

KEYWORDS: Farmer, Artificial Intelligence, Market Prices.

GAMING AS A PROFESSIONAL CAREER: PUBLIC AWARENESS AND PERCEPTION

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ABSTRACT:

The gaming industry has grown rapidly over the past decade due to improvements in technology, better internet access, and the increasing use of smartphones and digital platforms. In earlier times, video games were mostly seen as a form of entertainment or a way to pass time. However, this perception has started to change in recent years. Many young people are now exploring gaming not only as a hobby but also as a possible professional career. The growth of esports competitions, gaming tournaments, streaming platforms, and gaming content creation has opened several new opportunities for people who are interested in gaming.

This research study focuses on understanding how people view gaming as a professional career. It tries to examine whether individuals are aware of the career opportunities available in the gaming industry and whether they consider it a stable and reliable career option. Even though the gaming industry is expanding quickly, many people still have mixed opinions about whether gaming can provide long-term career security.

The main objective of this study is to analyze gaming habits among individuals and to measure their level of awareness about different career opportunities related to gaming. The study also aims to understand public perception about income stability, career growth, and long-term prospects in the gaming industry. In addition, the research attempts to identify some of the common challenges faced by people who want to pursue gaming professionally. These challenges may include social acceptance, parental concerns, and the lack of proper training or guidance in this field.

The results of the survey show that gaming is especially popular among young individuals. Most of the respondents belonged to the age group of 21–25 years, followed by the 15–20 age group. A large number of participants reported that they play video games regularly. The survey also included both male and female respondents, although the number of male participants was slightly higher.

KEYWORDS: Gaming Industry, Technology, Career Security.

THE FINANCIAL IMPACT OF ESG-DRIVEN HUMAN RESOURCE PRACTICES: A CASE STUDY OF INFOSYS AND WIPRO

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ABSTRACT:

Environmental, Social, and Governance (ESG) principles have become increasingly influential in shaping modern corporate strategies and organizational practices. As global businesses face growing pressure from investors, regulators, and stakeholders to adopt sustainable and responsible operations, organizations are progressively integrating ESG considerations into various functional areas. Among these, human resource management has emerged as a critical driver of sustainability, as HR policies and practices play a central role in shaping organizational culture, employee engagement, and long-term strategic capabilities. In recent years, the concept of ESG-driven human resource practices—often associated with green human resource management and sustainable talent strategies—has attracted considerable attention in both academic research and corporate practice.

Despite the increasing recognition of ESG frameworks, the relationship between ESG-oriented HR practices and financial performance remains relatively underexplored, particularly in the context of emerging economies. While several studies highlight the environmental and social benefits of sustainable HR initiatives, limited research has examined how these practices may influence financial outcomes such as profitability, operational efficiency, investor confidence, and long-term organizational value. This gap highlights the need for more context-specific investigations that examine how ESG-driven HR strategies are implemented within organizations and how they potentially contribute to financial resilience and competitiveness.

Using a qualitative case study methodology, the research investigates various ESG-oriented HR practices such as green recruitment, employee sustainability training, diversity and inclusion initiatives, ethical governance practices, and employee well-being programs. The analysis seeks to understand how these initiatives align with broader ESG objectives and how they may influence organizational performance from a financial perspective.

KEYWORDS: ESG, Infosys, Wipro.

AN INDUSTRY 4.0 - ENABLED INTEGRATED AUTOMATION FRAMEWORK FOR SCALABLE AND TRACEABLE UAV MANUFACTURING

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ABSTRACT:

The rapid expansion of **Unmanned Aerial Vehicles (UAVs)** across commercial, industrial, and defense sectors demands manufacturing systems that are efficient, traceable, and scalable. Conventional drone production methods remain largely manual, leading to limited component traceability, inconsistent assembly quality, and constrained production throughput. To address these challenges, this paper proposes an integrated **hardware–software automation framework** designed to modernize drone manufacturing through **Industry 4.0 principles**. The proposed system integrates dashboard-driven process control, barcode-based component identification, and collaborative robotic systems (cobots) to establish a streamlined and digitally connected production environment. Barcode-enabled tracking is implemented at gate entry, inventory storage, and component issuance stages to ensure real-time visibility and traceability of heterogeneous components sourced from multiple vendors.

A centralized administrative dashboard functions as a **Manufacturing Execution System (MES)** that coordinates inventory management, model-based assembly workflows, automated component deduction, and compliance-oriented documentation. Collaborative robots are incorporated at critical assembly stages to assist in repetitive and precision-intensive tasks such as motor mounting, frame alignment, and fastener tightening, while human supervision is maintained to support flexible customization and quality assurance. The framework further integrates automated checklist-driven flight validation, software-generated test reports, rule-based billing computation, and digital logistics tracking. By combining barcode traceability with human–robot collaboration, the proposed system significantly reduces human error, improves repeatability, and enhances production scalability while maintaining adaptability to diverse drone configurations. Overall, the framework provides a practical and modular pathway for manufacturers transitioning from manual production processes toward **smart, Industry 4.0-enabled drone manufacturing environments**.

KEYWORDS: Industry 4.0, Automation Framework, Drone.

GAMIFIED ATTENTION TRAINING THROUGH CONTINUOUS GAMEPLAY: A COGNITIVE TRAINING MODEL USING MODIFIED SNAKE MECHANICS

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ABSTRACT:

Digital environments characterized by rapid information consumption and short-form media have increasingly influenced human attention patterns. Many individuals report reduced ability to maintain sustained focus on cognitively demanding tasks such as reading, studying, or analytical work. Existing cognitive training applications attempt to address this challenge through collections of multiple mini-games designed to train individual mental functions such as memory, reaction time, or problem solving. However, such systems often suffer from low long-term engagement because users must repeatedly switch between unrelated tasks, making the experience feel fragmented and test-like rather than intrinsically enjoyable. This research proposes a novel approach to cognitive training through a continuous gameplay system based on a modified version of the classic Snake game. Instead of presenting multiple separate cognitive exercises, the proposed model uses a single familiar game environment that can be dynamically modified to train different types of human attention while preserving the core entertainment value of the gameplay.

The proposed system introduces four primary gameplay modes designed to target specific attention mechanisms identified in cognitive psychology. The first mode focuses on sustained attention, where players must track and mentally count a single type of fruit while navigating the snake continuously. The second mode introduces divided attention by presenting multiple fruit types that must each be counted separately while maintaining control of the snake's movement. The third mode targets selective attention by instructing players to count only specific fruits while deliberately ignoring others appearing in the game environment. The fourth mode introduces alternating attention by assigning arithmetic rules to different fruits, such as addition or subtraction, requiring the player to constantly switch mental rules while continuing gameplay.

KEYWORDS: Attention Training, Cognitive Games, Gamification, Executive Attention, Working Memory.

AUTHENTICITY IN THE AGE OF AI: HOW AI-GENERATED INFLUENCERS AFFECT CONSUMER TRUST

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ABSTRACT:

The rapid development of artificial intelligence (AI) technologies has significantly transformed digital marketing practices and introduced new forms of interaction between brands and consumers. One of the most notable developments in recent years is the emergence of AI-generated or virtual influencers. These computer-generated personalities operate on social media platforms and interact with audiences in ways similar to human influencers. Brands increasingly collaborate with such virtual influencers to promote products, enhance brand visibility, and create innovative marketing campaigns. However, the increasing use of AI-generated influencers raises important questions about authenticity, credibility, and consumer trust in the digital marketing environment. This study aims to examine how AI-generated influencers influence consumer perceptions of authenticity and how these perceptions affect consumer trust in digital marketing.

This research adopts a secondary research approach by analysing existing academic literature, industry reports, and documented case studies related to AI-generated influencers and consumer behaviour. Secondary data sources include scholarly research papers on influencer marketing, artificial intelligence in marketing, and consumer trust in online environments. In addition, the study reviews several prominent case studies of virtual influencers such as Lil Miquela, Kyra, Shudu Gram, Noonouri, and Imma, who have collaborated with global and regional brands to promote products and services on social media platforms.

The findings of this study suggest that younger consumers, particularly Generation Z, are more open to interacting with AI-generated personalities due to their familiarity with digital technologies and virtual environments.

KEYWORDS: Artificial Intelligence, Virtual Influencers, Consumer Trust, Digital Marketing, Influencer Marketing, Authenticity.

IMPACT OF EARLY MENTORSHIP PROGRAMS ON CAREER READINESS OF STUDENTS

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ABSTRACT:

Early mentorship programs have become an important strategy for supporting students in their academic and professional development. Mentorship provides guidance, skill development, and exposure to career opportunities, which can significantly influence students' preparedness for the workforce. The purpose of this study is to examine the impact of early mentorship programs on the career readiness of students. Career readiness includes the development of professional skills, career awareness, confidence in decision-making, and the ability to adapt to workplace expectations. This research adopts a secondary data approach by reviewing existing literature and research studies on mentorship and student development. The study analyzes how mentorship relationships contribute to students' career planning, networking abilities, and overall professional growth. Findings from previous studies indicate that students who participate in mentorship programs demonstrate higher levels of career self-efficacy, clearer career goals, and improved communication and leadership skills compared to those without mentorship support. The research highlights the importance of implementing structured mentorship initiatives within educational institutions to bridge the gap between academic learning and industry requirements. The study concludes that early mentorship programs play a significant role in enhancing students' career readiness and can contribute to better employment outcomes and long-term professional success.

KEYWORDS: Early Mentorship Programs, Career Readiness, Student Development, Professional Skills Development, Career Self-Efficacy, Mentorship Relationships, Career Planning, Higher Education, Workforce Preparedness, Professional Growth.

DEEFAKE-ENABLED FINANCIAL FRAUD IN FINTECH: DETECTION, RISK MODELING, AND MITIGATION FRAMEWORK

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ABSTRACT:

The rapid growth of financial technology (FinTech) has transformed the way people conduct financial transactions through digital platforms and mobile applications. Companies such as PayPal and Stripe provide convenient and fast financial services, but they also face increasing cybersecurity threats. One emerging threat is deepfake technology, which uses artificial intelligence to create highly realistic fake audio, video, or images. Cybercriminals can exploit deepfakes to impersonate individuals, bypass identity verification systems, or conduct fraudulent financial transactions. As these technologies become more advanced, detecting and preventing deepfake-enabled financial fraud has become a major challenge for fintech platforms. Therefore, this research aims to examine the risks of deepfake technology in fintech systems and explore possible measures to enhance security and fraud prevention.

To examine the potential risks of deepfake technology in fintech platforms and its role in enabling financial fraud. To analyze user awareness and perceptions regarding deepfake-enabled financial fraud in digital financial services. To evaluate fraud detection approaches using financial transaction datasets. To suggest security measures that fintech platforms can implement to mitigate deepfake-related financial fraud.

Financial technology has significantly transformed digital payment systems by providing fast and convenient financial services through platforms such as PayPal and Stripe. However, the rapid growth of fintech has also increased the risk of cyber threats and financial fraud. Recent studies highlight that emerging technologies like deepfakes can be used by cybercriminals to impersonate individuals and manipulate authentication systems.

KEYWORDS: FinTech, Digital Payment, Machine Learning.

PREDICTING THE IMPACT OF ARTIFICIAL INTELLIGENCE USAGE ON PROBLEM-SOLVING AND CRITICAL THINKING SKILLS AMONG COLLEGE STUDENTS USING MACHINE LEARNING

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ABSTRACT:

The research paper aims to study and predict the impact of artificial intelligence on problem solving and critical thinking skills among college students. It aims to prediction the data using machine learning algorithms. Five Machine learning algorithms were used namely Random Forest, K-Nearest Neighbors, Support Vector Machine, Naive Bayes, and Decision Tree. The data was collected using structured questionnaire of survey resulting in 215 student responses. Among the five algorithms, the Support Vector Machine (SVM) model demonstrated the best predictive performance based on the Root Mean Square Error (RMSE) evaluation metric, achieving the lowest RMSE value of 1.849.

In addition to predictive modeling, a Probability-Based Student AI Dependency Risk Score was developed to categorize respondents into low, medium, and high AI dependency groups. The results show that AI tools significantly influence students' academic behavior. The probability-based risk analysis categorized students into different levels of AI dependency. Most students were identified in the medium dependency risk category, indicating that AI tools are commonly used as assistance in academic tasks. However, a smaller group of students exhibited high dependency on AI tools, which may potentially reduce independent problem-solving and analytical thinking abilities.

KEYWORDS: Artificial Intelligence, Machine Learning, Critical Thinking, Problem-Solving Skills, Student AI Dependency, Support Vector Machine, Predictive Modeling.

ANALYZING THE IMPACT OF ARTIFICIAL INTELLIGENCE ON STUDENTS COGNITIVE BEHAVIOUR: AN EXPLORATORY DATA ANALYSIS USING TABLEAU

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ABSTRACT:

The rapid growth of artificial intelligence (AI) tools such as ChatGPT, Gemini, and other generative systems is changing the way students learn, access information, and approach academic tasks. While these technologies provide quick access to information and help generate ideas, their increasing use in education has raised important questions about how they influence students' critical thinking and problem-solving abilities. This study explores how the use of AI tools affects college student's thinking processes, decision-making behaviour, and interaction with AI-generated information.

The research adopts a quantitative survey-based approach to understand student's patterns of AI usage and how these patterns relate to their confidence in solving problems independently, their level of trust in AI-generated responses, their tendency to verify AI outputs, and their approaches to brainstorming and decision-making. Data were collected through a structured questionnaire distributed among college students from different academic backgrounds.

The findings reveal several important trends. A noticeable number of students reported lower confidence in making decisions without AI assistance, particularly among those who frequently use AI tools. However, most respondents indicated that they trust AI results with verification, suggesting that students generally rely on AI while still evaluating the output.

KEYWORDS: Artificial Intelligence, Students Behaviour, Tableau.

HUMAN-CENTERED CYBERSECURITY: UNDERSTANDING AND PREVENTING SOCIAL ENGINEERING SCAMS IN THE DIGITAL ERA

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ABSTRACT:

The rapid expansion of digital technologies and the increasing reliance on online platforms for communication, financial transactions, and daily activities have significantly transformed modern society. However, this digital growth has also led to a parallel rise in cyber fraud, posing serious challenges to individuals and institutions alike. Among the various forms of cybercrime, online scams, task-based frauds, and the misuse of One-Time Password (OTP) systems have emerged as prevalent and evolving threats.

This study aims to examine the nature and patterns of these fraudulent activities, with a particular focus on how individuals become targets of such scams and the underlying factors that influence their vulnerability. Task-based frauds, which often involve deceptive promises of easy earnings through simple online activities, have gained prominence due to their ability to exploit human psychology, trust, and financial desperation. Similarly, OTP-based frauds leverage social engineering techniques to manipulate individuals into disclosing sensitive authentication credentials, thereby compromising their financial security.

The research further explores the level of awareness among individuals regarding these threats and evaluates the effectiveness of existing preventive measures. Despite increased efforts by financial institutions and regulatory authorities to promote cybersecurity awareness, many users continue to fall victim to sophisticated and rapidly evolving scam techniques.

KEYWORDS: Cybersecurity, Social Engineering, Digital Era.

A COMPARATIVE STUDY OF VECTOR STORES IN RAG PIPELINES: FAISS, CHROMADB, AND QDRANT FOR CONVERSATIONAL Q&A SYSTEMS

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ABSTRACT:

Large Language Models (LLMs) such as GPT-4 and LLaMA are prone to hallucination — generating factually incorrect responses. Retrieval-Augmented Generation (RAG) addresses this by retrieving relevant document chunks from a vector store and grounding LLM responses in real information. The choice of vector store directly affects retrieval quality, latency, and scalability, yet no dedicated three-way comparison of FAISS, ChromaDB, and Qdrant for conversational Q&A systems exists in academic literature. This paper presents a structured comparative analysis of these three vector stores across six parameters: setup complexity, persistence, retrieval speed, scalability, metadata filtering, and Q&A suitability. Findings indicate that FAISS excels in speed and large-scale production but requires manual persistence. ChromaDB offers the simplest developer experience with automatic persistence, best suited for prototyping. Qdrant provides the most balanced profile with advanced filtering and hybrid search, suitable for both prototyping and production. No single vector store is universally optimal; selection should be guided by deployment context and development stage.

KEYWORDS: Retrieval-Augmented Generation, Vector Store, FAISS, ChromaDB, Qdrant, LangChain, Conversational AI, Q&A Chatbot.

AI-DRIVEN SEMANTIC SEARCH IN MYSQL USING VECTOR EMBEDDINGS AND LARAVEL PRISM

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ABSTRACT:

This research proposes an AI-based semantic search system for MySQL using vector embeddings via Laravel Prism's Vector-Native Eloquent ORM. Traditional MySQL databases rely primarily on keyword matching and struggle to interpret the semantic intent behind user queries. This often results in lower accuracy when different terminology is used for the same concept. The proposed method stores both relational data and semantic vectors to enhance retrieval. This study compares keyword-based and vector-based search methods according to accuracy, speed, and performance on large datasets. The results demonstrate that semantic search improves relevance while seamlessly integrating with existing MySQL infrastructure.

KEYWORDS: MySQL, AI-Driven, Prism Laravel.

BEYOND AUTOMATION: THREATS OF AGENTIC AI

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ABSTRACT:

Even though in this growing generation of Artificial Intelligence and Machine Learning, Agentic AI has not been integrated in the internet in the same intensity and capacity as that of Gen AI. But with the growing tools and the advancement in the technology especially that has been carried on by the likes of tech giants such as Anthropic, Google and OpenAI.

I, Rahul, believe that Agentic AI will have a strong hold in the internet and to the users in the coming years. And along with AI agents, there is a possibility of the immense threats that might grow because unlike Generative AI such as ChatGPT, Google's Gemini, AI agents have the power to do changes in the system. And when there is power, there is a risk. Hence, my research is on the growing threats of the Agentic AI that is being overlooked right now.

KEYWORDS: Agentic AI, Machine Learning, Automation.





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