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SPECTRUM

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Spectrum is an e-magazine with the comprehensive collection of all the papers that have been published in our journal over the last two months — Volume 10, Issue 3 (May-June, 2024). This edition brings together 42 papers by 103 authors from 49 institutions. Each entry links to the abstract and the full paper.

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ABSTRACTS

1 Hybrid Approach Involving Deep Learning Techniques for Recognition Facial Emotions Efficiently

Paper ID V10I3-1136 · Pages 1-4 · Deep Learning

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Dr. Ashish Sarvaiya, Assistant Professor, Government Engineering College, Bhavnagar, Gujarat

Facial emotion recognition holds paramount importance in various human-centric applications, particularly in human-computer interaction (HCI) systems. This paper delves into the realm of machine vision and artificial intelligence (AI) to explore the methodologies and advancements in facial emotion identification. Leveraging computer vision technologies, coupled with AI algorithms, the research focuses on the recognition of human emotions through facial expressions. In human communication, facial expressions serve as a vital channel for conveying emotional states, playing a significant role in interpersonal understanding. Understanding emotions expressed through facial cues aids in effective decision-making and tailored interactions in human-machine interfaces. Emphasizing the relevance of non-verbal communication, this study investigates the significance of facial expressions in conveying emotional nuances. Deep learning techniques, particularly convolutional neural networks (CNNs), have revolutionized facial emotion recognition by enabling end-to-end learning from raw image data. By minimizing reliance on handcrafted features and pre-processing techniques, CNN-based approaches demonstrate superior performance in emotion detection and classification. Researchers have made substantial strides in developing intricate neural network architectures to enhance the accuracy and efficiency of facial emotion recognition systems. Through a comprehensive review of existing literature and methodologies, this research contributes to the ongoing discourse surrounding facial emotion recognition. Insights gleaned from this study pave the way for the continued advancement of HCI systems, facilitating more nuanced and responsive human-machine interactions.

Keywords: Deep Learning, CNN, FERC, AI and SSD

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2 The Impact of Artificial Intelligence on Business Growth: A Comprehensive Analysis

Paper ID V10I3-1149 · Pages 5-10 · Computer Science

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Business has been revolutionized by artificial intelligence (AI) as machines can do what was once assigned to the human brain. We examine the effect of AI on productivity improvement and growth in various sectors through this research paper. The document evaluates the impact of AI on optimizing operations, enhancing decision-making, and fostering innovation by arguing that it affects all these areas. For instance, Amazon has made use of AI techniques to improve its efficiency by reducing costs and increasing customer satisfaction levels. In addition to that, this essay also discusses upcoming trends where AI is expected to change a lot about

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business practices including its uses in politics, education, and the fashion industry. This essay brings out the many-sided advantages of using AI for growing business and maintaining competitiveness with empirical evidence and statistical insights.

Keywords: Artificial Intelligence, Business Growth, Automation, Data Analysis, Innovation

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3 Intelligent navigation through recommended floor plans

Paper ID V10I3-1146 · Pages 11-17 · Data Science

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Navigation is essential in the working of a helper robot. Lack of floor plan hinders the training of the helper bots. A floor plan recommender system will help solve this concern. Creating building floor plans is also very essential in the planning and construction of a building. Moreover, the integration of robotic mobility would provide a real-time understanding of the spatial layouts, which contributes to a more efficient and dynamic design implementation. The goal of this project is to develop a SimGNN-based recommendation system that suggests floor plans that satisfies the client requirements about the spatial relationship. The SimGNN-based model calculates similarity between the graphs after transferring the spatial relationship in the floor plan to the graph. We aim to utilize the recommended floor plans to enable the autonomous navigation of a robot. By mentioning the start and the finish point of the robot, a path is created and the robot will maneuver through the obtained path. Through this integration of recommendation system with the robotic mobility, we aim to optimize the training process of helper bots along with improving the design and construction process of a building.

Keywords: Floorplan Recommendation, Autonomous Navigation

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4 Centralized street light monitoring system using IoT

Paper ID V10I3-1148 · Pages 18-21 · Iot

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The importance of solar LED street lighting systems in reducing the significant energy consumption of conventional street lights is described in this abstract. It emphasizes how solar panels and IoT technology may be combined for effective energy management and conversion. The primary goals of the system are intelligent light control with motion sensors, problem detection through GSM technology, and real-time monitoring of solar panel and battery performance. Energy efficiency and the use of renewable energy sources are provided by this system, which uses solar radiation during the day to power LED lights at night. It also highlights the

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project's role in facilitating effective IoT integration and data transfer, which makes real-time energy management and monitoring possible.

Keywords: Street Light, Real-world Problem, IoT

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5 News Data Classification using Natural Language Processing and Large Language Models

Paper ID V10I3-1156 · Pages 22-24 · Computer Science Engineering

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In order to arrange and evaluate this enormous amount of data, effective categorization techniques are now essential due to the exponential growth of digital news material. This study investigates the use of Large Language Models (LLMs) and other Natural Language Processing (NLP) approaches for the classification of news data. We study how well LLMs do automatic news article classification into predefined classes or subjects. We show through experimental evaluation that LLM-based techniques are capable of effectively classifying news data, providing valuable information about future directions and possible applications in this field.

Keywords: News Classification, Natural Language Processing, Large Language Models, Machine Learning, Text Classification

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6 Probe Method for Stock Price Prediction using Machine Learning Techniques

Paper ID V10I3-1157 · Pages 25-30 · Data Science

Parnandi Srinu Vasarao, Research Scholar, Lincoln University College,Malaysia
MIDHUN CHAKKARAVARTHY, Associate Professor, Lincoln University College,Malaysia

A novel approach, referred to as the "Probe Method," for predicting stock prices by leveraging advanced Machine Learning (ML) techniques. In the dynamic and unpredictable world of financial markets, accurate forecasting of stock prices remains a challenging task. The Probe Method integrates a sophisticated ML framework to uncover patterns, relationships, and trends within historical market data, offering a promising avenue for improved prediction accuracy. The methodology begins by formulating the stock price prediction as a supervised learning problem, where historical stock prices, technical indicators, and relevant economic factors collectively form the input features. The Probe Method introduces a unique twist by employing a diverse set of ML algorithms, acting as "probes," to extract valuable insights from the data.

Keywords: Forecast, Patterns, Supervised, Economic, Finance, Features, Relationship, Trends

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7 The Cognizance of Implant Abutments selection: A Review

Paper ID V10I3-1158 · Pages 31-34 · Prosthetic Dentistry

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Dental implants have been one of the highly demanding treatment modalities in the field of dentistry since last few decades due to its various benefits such as its longevity, maintaining the integrity of oral tissues and structure and prevention of bone loss. Implant abutments are main components which serves in restoring dental implants. An abutment is that part of a dental implant which assembles a prepared tooth and is designed to be screwed into the implant body. It is the principal component which gives retention to the prosthesis. The parts of implant abutment are – The base, head and the collar. The base is that part of abutment which engages into the internal part of implant. The head acts as a prosthetic retainer and collar connects base and head. Thus, this review article mainly focuses on the implant abutments, its classification and abutment connection.

Keywords: Dental implants, Abutment, Abutment connection, Implant Abutment

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8 What are Quantum Computers and Why do we Need them?

Paper ID V10I3-1159 · Pages 35-38 · Quantum Computers

Aarnav Chhikara, Student, The British School, New Delhi, India

Quantum computers represent the forefront of technological advancement, promising revolutionary applications across various fields. This paper explores the fundamental mechanics of quantum computing, the limitations of classical computers, and the superior capabilities of quantum computers. Additionally, it examines practical applications of quantum computing in real-world scenarios. The goal is to provide a comprehensive understanding of why quantum computing is essential for future technological progress and to highlight its potential to transform industries such as agriculture, artificial intelligence, cybersecurity, and finance.

Keywords: Quantum, Quantum Computing, Probability, Possibility, Sycamore, Application, Shor’s algorithm, Classical computers, Data, Cyber Security, Quantum mechanics, Superposition, Quantum entanglement, Quantum Tunneling, AI, Business

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9 Exploring the Gender Pay Gap in India: Assessing its Implications on Economic Growth and Development

Paper ID V10I3-1161 · Pages 39-45 · Economics. Gender Studies

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This research aims to look into unequal pay among India's male and female employees, utilizing information obtained from the National Sample Survey Organization (NSSO) as well as the Labour Bureau Ministry of Labour and Employment Government of India. The main idea is to examine women's workforce participation in different Indian states between 2006 and 2014 while also comparing wages between men and women doing similar jobs. The study of gender inequality in salaries is important because it hampers economic growth, promotes social injustice, and undermines efforts for gender balance. This thesis will therefore use reliable government sources that have collected large amounts of data to reveal what causes wage imbalances between males and females within Indian labor markets. This inclusion of data covering almost a decade allows for long-term assessment regarding shifts or patterns vis-à-vis female workers' job rates as well as earnings compared with those earned by their male counterparts. Consequently, through detailed statistical analysis based on various parameters, this investigation intends to find out why the difference in pay exists among different states in India and whether there are any linkages with education levels achieved; types of industries engaged in, or even cultural practices followed within these areas. By shedding light on the magnitude and determinants of the gender pay gap in India, this study aims to inform evidence-based policy interventions aimed at promoting gender equality and fostering inclusive economic development. The findings of this research hold implications not only for policymakers and governmental agencies but also for employers, civil society organizations, and advocacy groups striving to address gender-based disparities in the workplace and promote greater gender parity. This research contributes to the existing body of knowledge on the gender pay gap in India by conducting a rigorous analysis of empirical data collected from reputable sources. By elucidating the complexities of this issue and exploring potential avenues for intervention, this study seeks to advance our understanding of gender inequality in the Indian labor market and advocate for policy measures aimed at achieving greater economic justice and gender equity.

Keywords: Gender Parity , Equality , Glass Ceiling, Indian Economy

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10 To What Extent Would The Mumbai Trans Harbour Link Have an Impact on The Economic Growth of Maharashtra and Affect the Real Estate Market in Navi Mumbai?

Paper ID V10I3-1162 · Pages 46-53 · Economics

Yuvraj Gode, Student, Hill Spring International School, Tardeo, Mumbai

The research question at hand explores the anticipated impact of the Mumbai Trans Harbour Link (MTHL) on the economic growth of Maharashtra and its influence on the real estate market in Navi Mumbai. As a transformative infrastructure project, the MTHL holds the potential to reshape transportation dynamics and socioeconomic landscapes in the region. This study aims to assess the extent to which the MTHL will contribute

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to the economic growth of Maharashtra by enhancing connectivity, facilitating trade, and attracting investments. Additionally, the research seeks to investigate the implications of the MTHL on the real estate market in Navi Mumbai, including changes in property values, development patterns, and market dynamics. Through a comprehensive analysis of existing literature, empirical data, and stakeholder perspectives, the study endeavors to provide valuable insights for policymakers, urban planners, investors, and other stakeholders involved in regional development initiatives. By elucidating the multifaceted impacts of the MTHL, the findings of this research aim to inform evidence-based decision-making processes aimed at fostering sustainable economic development and urban growth in Maharashtra and Navi Mumbai.

Keywords: Mumbai Trans Harbour Link, economic growth in Maharashtra, Real Estate market expansion in Navi Mumbai

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11 Beyond GDP: A Multifaceted Indicator Approach

Paper ID V10I3-1165 · Pages 54-60 · Economics

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This paper assesses the comprehensiveness of the various economic indicators and their relevance in the current world order. It goes over the conventionally used indicators such as the Gross Domestic Product (GDP), Gross National Income (GNI), money supply and other more diverse metrics such as the Human Development Index (HDI). Further analysis is done on their uses and disadvantages, highlighting their limited nature in indicating the true state of an economy. Finally, a suggestion is proposed in order to navigate through these limitations.

Keywords: Economic Indicators, GDP, HDI, Limitations

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12 Real-time Hand Gesture Recognition using TensorFlow and OpenCV

Paper ID V10I3-1164 · Pages 61-65 · Computer Science And Engineering

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Human-computer interaction (HCI) methods that are more intuitive and accessible continue to be in high demand. Conventional interfaces have drawbacks, particularly for people with disabilities or in particular settings. A real-time hand gesture recognition system is presented in this study designed to address these challenges. Our system combines two complementary methods: keypoint classification for detecting static hand poses, and point history classification for recognizing dynamic gestures. These two approaches create a versatile system capable of interpreting a wider range of user commands. Custom datasets were compiled for both model types and trained independently using neural network architectures tailored to the data. We present the implemented system architecture, model evaluation, and potential applications with a focus on

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assistive technologies.

Keywords: Gesture Recognition, Computer Vision, Key Point Classification, Image Preprocessing, Augmented Reality, Human-Computer Interaction, OpenCV.

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13 APPLICATIONS OF 3D PRINTING IN A MULTITUDE OF INDUSTRIES

Paper ID V10I3-1170 · Pages 66-70 · 3d Printing

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3D-printing, also called Additive Manufacturing (AM) is the most rapidly growing industrial technique, fostering inventive, economical, and eco-friendly solutions. It can produce complex-shaped products using the data provided by computer-aided design (CAD) software, layer by layer, with high precision resulting in minimal material wastage. The main agenda of this paper is to portray the various applications of this technology in different everyday industries which include the aerospace, automotive, medical, construction, and fashion industries respectively. It aims to show the countless advantages of AM over conventional methods as well as its relevance in the upcoming years.

Keywords: Additive manufacturing, 3D printing, Applications, Industries

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14 Waste Management Website: Trash to Treasure

Paper ID V10I3-1173 · Pages 71-75 · Environmental Science And Engineering

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The "Trash to Treasure" platform offers a novel solution to the pressing global issue of improper waste disposal, aiming to mitigate environmental pollution and promote sustainable waste management practices. With over62 million tonnes of waste generated annually and a significant portion left untreated, traditional waste management methods have proven insufficient. This project addresses the challenge by creating an online platform that connects waste sellers, waste buyers, and creative sellers, facilitating the reuse, recycling, and recovery of waste materials. Through the platform, waste sellers can upload details of their waste inventory, while waste buyers can purchase materials for manufacturing purposes, fostering a circular economy. Additionally, creative sellers can showcase their upcycled products, thereby promoting the reuse of waste materials. Moreover, the platform offers a unique feature to assist the best out of waste sellers in predicting the pricing of their creations, enhancing their economic viability. By promoting the adoption of the 3R principle (Reuse, Recycle, Recover), the "Trash to Treasure" platform aims to contribute to the creation of a zero-waste eco-friendly environment. This research paper explores the design, implementation, and potential impact of the platform in addressing the critical issue of improper waste disposal and advancing sustainable waste management practices.

Keywords: Reuse, Recycle, Recover, Treasure, Trash

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Website Design And Development For Tutoring Programming Languages

Paper ID V10I3-1179 · Pages 76-80 · Cs-language Processing Platform

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ABSTRACT The primary focus is on website design and development, which involves various programming languages utilized for both frontend and backend purposes. For instance, languages like HTML5, CSS, and Bootstrap Framework are commonly employed for frontend development, while PHP and Java are often utilized for backend design.[3] These are useful at the backend. In these recent times there are so many frameworks which are being used vastly. a framework is a standardized set of tools, libraries, and best practices that provides a structured foundation for building and managing web applications. It streamlines development by offering pre-built components and guidelines, thereby enhancing efficiency and maintainability. It is also known as MVC. A web-based application, accessible from anywhere in the world, proves incredibly beneficial for our daily tasks, enhancing convenience and efficiency in our lives. Working at Bluebird Interactive significantly enriched my career, providing valuable experience and opportunities to solve real-life problems. This gives the vision through all the details of Website Design And Development knowledge.[2] From responsive design principles ensuring cross-device compatibility to the integration of robust functionalities, such as e-commerce capabilities and interactive elements, our focus remains on driving engagement and achieving tangible results. Focusing on scalability, security, and search engine optimization, we aim to build a robust foundation for long-term growth and enhanced visibility in the digital realm. By aligning closely with our clients' visions and objectives, this project aims to elevate their online presence, foster meaningful connections with their

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audience, and ultimately drive success in the ever-expanding online landscape.

Keywords: HTML5, CSS3, JavaScript, Responsive Design, User Experience (UX), User Interface, (UI), Frontend Development, Backend Development, Full-stack Development, Frameworks (e.g., React, Angular, Vue.js)

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16 Bridging Radio Diversity using Software Defined Radio

Paper ID V10I3-1182 · Pages 81-86 · Software Defined Radio

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Ensuring effective communication in joint radio operations is paramount for coordinating response efforts across various agencies. This paper introduces "InterComm SDR," a Universal Software Defined Radio (SDR) solution designed to bridge the gap between different radio systems, facilitating seamless interoperability between Very High Frequency (VHF) and Ultra High Frequency (UHF) radios. The technical details of a successfully executed waveform are discussed, with a focus on leveraging open-source technologies and drawing from global implementations of SDR technology to electromagnetic spectrum operations.

Keywords: Software Defined Radio (SDR), Intercomn SDR (IC-SDR), Digital Signal Processing (DSP), Electromagnetic Spectrum Operations (EMSO), Artificial Intelligence (AI), BladeRF, Universal Serial Radio Peripheral (USRP), Very High Frequency (VHF), Ultra High Frequency (UHF).

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17 Applying Semantic Analysis and Machine Learning to Develop Recommendation System

Paper ID V10I3-1184 · Pages 87-91 · Computer Science

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Completing elective courses at university has an important role on the career path of the future specialists. Making decision to study courses that cover certain skills and technologies directly influences on receiving job offer after graduation. Despite high level of importance of this topic, there is an issue when students make wrong decisions about elective courses that impact negatively on their academic performance. This research observes a solution to the actual problem by creating software to analyze data and give recommendations about appropriate elective courses for university students.

Keywords: Semantic Analysis, Fuzzy Logic, Recommendation System, SVM

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18 Respectful Maternity Care Practices During Labour Among Nursing Personnel

Paper ID V10I3-1190 · Pages 92-99 · Nursing

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ABSTRACT Safe motherhood care is the right of every woman, and it is the responsibility of the welfare state to provide quality maternal health services. Respectful maternity care (RMC) is not only a quality indicator of maternity care, but it also assures that all childbearing women's essential human rights are protected. Methods: A cross-sectional study was conducted to assess the Respectful Maternity Care Practices during labor among 60 nursing personnel from maternity centers who were selected by consecutive sampling technique. The data was collected by observation method, using pretested and validated tools such as background variables proforma of nursing personnel and standardized white ribbon Alliance Charter on Respectful Maternity Care during labor. Results: The findings revealed that 96.7% of the nursing personnel exhibited moderately adequate practice in respectful maternity care. The global mean practice score was 30.60/52 ± 2.76 (58.84%). There was a significant association between selected background variables—age, years of experience, marital status, number of children—and the practice of nursing personnel on respectful maternity care (RMC) during labor ($p < 0.05$).Conclusion: Implementation of Respectful Maternity Care needs and change of attitudes of nursing personnel who render care during childbirth will address the issue of disrespect and abuse towards women and provide happy and fulfilling experiences for all women during labor.

Keywords: Practice, Respectful Maternity Care, Nursing Personnel

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19 Peer Pressure and Decision-Making Among Adolescents: A Game Theory Perspective

Paper ID V10I3-1195 · Pages 100-108 · Behavioural Psychology

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Peer pressure is a critical factor affecting adolescents' choices, often leading to decisions that prioritize social conformity over personal benefit. A survey of adolescents (n=108, mean age=15.5 years) was administered to measure how peer pressure impacts decision-making in various social scenarios, particularly focusing on situations modeled by game theory concepts. The findings reveal that peer pressure significantly influences adolescents to make decisions that align with group expectations, even when such choices may not be individually optimal. The analysis indicates that students frequently choose to conform to peer expectations, which supports game theory predictions about cooperative and competitive behaviors in social dilemmas. The role of peer dynamics played in shaping adolescents' decision-making process was suggested. The need for measures that can help adolescents develop better decision-making skills under peer pressure was highlighted. Valuable insight was provided for educators, parents, and policy-makers aiming to support adolescents in navigating complex social interactions.

Keywords: Peer Pressure, Decision Making, Game Theory, Prisoner's Dilemma

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20 Artificial Intelligence with Special Perspective on Finance Industry

Paper ID V10I3-1188 · Pages 109-130 · Business Management

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Alan Turing first asked, "Can machines think?" in the 1950s, and artificial intelligence has existed ever since. Siri and Alexa on Amazon are now well-known. But the finance sector was the one that swiftly caught up with it. Technology is evolving at a rapid pace, and artificial intelligence (AI) is leading this change in the financial services sector. This rise has accelerated recently due to the development of big data, cloud computing, creative hardware, and quicker special-purpose systems. Algo trading, fraud detection, chatbots, market and regulatory compliance, market effect research, and stress testing are just a few of the many uses of artificial intelligence that are widely employed today. Financial services personnel struggle with the technology's inherent problems as well as its prospective benefits as this huge transformation takes place.

Keywords: Artificial Intelligence, Machine Learning, Deep Learning, Neural Networks, Automation, Financial Sector, Algorithms, Chatbots, Technology, Efficiency, Processing Power, Data Quality, Analytics, Brokerage, Mortgage, Investment, Risk Mitigation, Central bank, Cost-effectiveness, Interdisciplinary, Collaboration, Integration, Erratic behavior, Portfolio management.

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21 Immediate loading of dental implants placed with Osseodensification technique in Maxillary Posterior region of jaw

Paper ID V10I3-1196 · Pages 131-139 · Dental Implantology

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Implant placement and immediate loading in maxillary posterior has always been a challenge because of various conditions like less dense bone, etc. Osseodensification has proven to be a superior technique to improve the overall success rate of implant restorations. This study is done on 28 patients with maxillary posterior missing tooth (n=14 each). The implant stability (using RFA method) and crestal bone levels are evaluated at the time of implant loading and at the end of 3 months. Osseodensification technique turns out to be the superior osteotomy preparation technique than conventional one in terms of stability and crestal bone loss in immediately loaded dental implants placed in maxillary posterior region.

Keywords: ossendensification, immediate loading, ISQ, posterior maxilla, dental implants

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22 Automatic Rain Sensing Windows

Paper ID V10I3-1186 · Pages 140-145 · Automation

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The aim is to create an automatic rain-sensing window that closes when it rains. The concept of sensing rainwater to run a DC motor can be widely seen in the automobile industry. Wipers that start automatically after detecting rain are quite common in vehicles. However, not much research has been done regarding using this system for domestic use. By putting forward this idea we hope to incorporate these windows effectively in both homes and commercial buildings. Rain sensors, microcontrollers, DC motors, and Dual H-Bridge motor drivers are some of the components used in our work. The objective is to ensure that the technology behind these windows is reliable and increase the accuracy, accessibility, and dependability of the product by addressing any potential limitations or challenges that may arise. The aim is to create an automatic rain-sensing window that closes when it rains. The concept of sensing rainwater to run a DC motor can be widely seen in the automobile industry. Wipers that start automatically after detecting rain are quite common in vehicles. However, not much research has been done regarding using this system for domestic use. By putting forward this idea we hope to incorporate these windows effectively in both homes and commercial buildings. Rain sensors, Microcontroller, DC motor, and Dual H-Bridge motor driver are some of the components used in our work.

Keywords: Automatic Rain Sensing Window, DC Motor, Microcontroller, Motor Driver, Rain Sensor, Smart Home

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23 Complexities of Social Mobility: A Multifaceted Analysis of Factors Influencing Workers in Unorganized Sectors

Paper ID V10I3-1202 · Pages 146-155 · Commerce

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Purpose: The study of challenges encountered by the workers belonging to the unorganized sector leads to have greater understanding in order to provide awareness among the workers possessed with un-skilled, semi-skilled, and high-skilled. Present workers in the unorganized sectors are not protected and monitored by the government due to that more job-related exploitation and violations are faced by the workers. This is considered essential to provide tailored content for workers belonging to different categories such as Minor ranchers, landless rural laborers, and tenant farmers. The study is done with the intention of identifying challenges faced by these three groups of workers. Design/Methodology/ Approach This was conducted by using an exploratory research design on a sample size of 414 comprising 138 respondents from three categories of workers belonging to unorganized sector selected, namely Minor ranchers, landless rural laborers,

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and tenant farmers. The study used a convenience sampling technique; the data was collected with the help of a formal interview schedule. Likert scale statements were used to record the responses ranging from highly agree to highly disagree and multiple discriminant analysis was applied for data processing. Findings The study found that Minor Ranchers workers are not getting reasonable wages and advances, and Ransome is paid to middlemen by the land ranchers, and wages are paid on time to them. The Landless rural laborers are not receiving wages on time and insufficiency in getting workers at the time of harvesting created more work burden. Tenant farmers need to pay for the length of working hours and for overtime. Originality Although studies on complexities and challenges faced by unorganized sector workers are available, studies on the specific category of workers of the unorganized sector are found to be rare. This research finding will provide sufficient insight to the researchers and academicians as well as to the workers belonging to the different groups with educational backgrounds.

Keywords: Social Mobility, Social Progress, Exploitation, Skills

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24 How can iPSC-Derived Therapies Complement Traditional Burn Treatments, such as Skin Grafts and Wound Dressings?

Paper ID V10I3-1203 · Pages 156-166 · Regenerative Therapy

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Burn injuries pose significant challenges in clinical management, often resulting in long-term complications like scarring and impaired wound healing. Traditional treatments have limitations, spurring exploration into innovative modalities. Induced pluripotent stem cells (iPSCs) offer promise in regenerative medicine by providing personalized and autologous cell sources. This paper assesses iPSC-derived therapies' potential to complement traditional burn treatments. iPSCs, generated from patient somatic cells and differentiated into skin cells, offer a tailored approach to wound healing. Their immunomodulatory properties can mitigate inflammation and reduce rejection risk in allogeneic transplantation. Despite challenges, iPSC-based therapies can revolutionize burn care, improve outcomes, and enhance burn survivors' quality of life. Continued research and advancements in iPSC technology are essential for realizing these approaches' full potential in clinical practice. Burn injuries present complex wound management challenges, requiring innovative approaches. This paper evaluates iPSC-derived therapies' integration into two key aspects of burn treatment: skin grafting and wound dressings. Traditional skin grafting faces limited availability and functional outcomes, which iPSC technology may address by providing patient-specific, functionally enhanced graft material with reduced rejection risk. Similarly, traditional wound dressings have limitations impacting their effectiveness in burn treatment. Advanced dressings incorporating iPSC-derived cells offer active participation in wound healing, promoting tissue regeneration, and minimizing scarring. Preclinical and clinical studies demonstrate iPSC-derived therapies' efficacy in enhancing keratinocyte migration, angiogenesis, and wound closure. These findings underscore iPSC-based therapies' potential to revolutionize burn treatment by addressing key challenges and improving patient outcomes. Future research should focus on refining protocols, conducting large-scale clinical trials, and navigating regulatory pathways to facilitate widespread adoption, ultimately enhancing the quality of life for burn survivors. Addressing scalability, cost, and ethical considerations is paramount for successful integration into clinical practice, requiring collaborative efforts between researchers,

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clinicians, regulators, and stakeholders.

Keywords: Ipsc, Burn Treatment, Ethics, Review, Wound Healing

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25 Social Media: Its Appeal to Adolescents and Influence on Adolescent Mental Health

Paper ID V10I3-1209 · Pages 167-171 · Psychology

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Social media has become an integral part of our lives, allowing us to remain connected with others despite distance or the weather outside. This online world has greatly impacted adolescents as a whole. The study explores the inherent need that teenagers have for social media as well as its influence on their mental health.

Keywords: Mental Health, Social-Media, Adolescent, Influence, Affects and Appeal

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26 Enhancing Smiles with In-Office Vital Bleaching -A Case Report

Paper ID V10I3-1201 · Pages 172-174 · Dentistry

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In today’s world, beauty and esthetics play a major role in people’s lives. It goes without saying that we are attracted to bright smiles and everybody desires to have shining white teeth. Discoloration, especially when the anterior teeth are affected also means a significant disturbance of aesthetics and can hamper the patient’s self-esteem. Tooth whitening, also known as bleaching is the most conservative treatment for discolored teeth. This article shows a case of successful treatment of fluorosis with the help of in-office vital bleaching.

Keywords: Esthetics, Discoloration, Vital Bleaching

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27 Aesthetic Rehabilitation of Anterior Teeth Using Composite Resin and Putty Index – A Case Report

Paper ID V10I3-1200 · Pages 175-179 · Conservative Dentistry And Endodontics

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In today's world, the majority of the dental treatments that are performed are done with aesthetics as the major concern. Diastema is one of the most common forms of malocclusion. Along with midline diastema, there can be generalized spacing in anterior teeth. Some patients report fractured teeth due to trauma which commonly involves maxillary anteriors in children and adolescents. Correction of multiple diastema without much preparation of the teeth is challenging in clinical esthetic dentistry. It is important to ensure that restorations should restore not only function but also aesthetics. Restoration of palatal surfaces using direct techniques is difficult but can be simplified by using a template. This article presents a case report of esthetic management of spacing in maxillary anterior teeth including midline diastema and fractured incisor with composite resin restoration utilizing the putty index technique.

Keywords: Diastema, Multiple Spacing, Tooth Fracture, Putty Index Technique, Palatal Guide, Custom Template, Composite Resin Restoration.

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28 Artificial Intelligence: The Future of Finance

Paper ID V10I3-1211 · Pages 180-183 · Finance

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"Artificial intelligence is the new electricity" (Ng). This paper highlights the importance and development of artificial intelligence in finance. It discusses various topics like challenges faced, applications in today's firms, and more. In a future where intelligent systems drive financial innovation and sustainability; the study highlights the bright possibilities for AI in finance. This study provides insights into the changing relationship between AI and finance through thorough analysis and synthesis, opening the door for more investigation and research on this intriguing topic. This paper examines how artificial intelligence modernizes operations and helps firms maintain a competitive edge in the market.

Keywords: Artificial Intelligence, Finance, Risk Management, Trading Strategies, Ethical Challenges

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29 Review on Nature’s Remedies for Diabetes : Evaluating the Efficacy of a Herbal Powder

Paper ID V10I3-1215 · Pages 184-192 · Student

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Diabetes mellitus (DM) is a metabolic condition of the endocrine system. This Frightening condition is set up in all zones of the world and is turning into a serious hazard to Healthcare providers. Now DM is the most spreading disorder in the world. In the rapidly cultivating World number of treatment options are accessible for the therapy of DM. Multifactorial Disorders, for diabetes elaborate colorful difficulties like hepatic poisoning, retinopathy, and immunodeficiency, etc. many medicinal spices have been used for diabetes mellitus in classical systems of medicament worldwide as they are a Great source of phytochemical components, and numerous of them are known to be effective against diabetes. Medicinal spices with Antidiabetic conditioning are being acceptable to lower side effects and low priced. The efficiency of antihyperglycemic spices is accomplished by raising insulin caching, boosting the absorption of glucose, sparking GLP, and obstructing glucose production. Antidiabetic spices Contain multiple phytochemical Components the single sauce used produces a moderate effect when combined with two nine spices that have different chemical components and pharmacological action producing synergistic effects avoiding repeated dosage and achieving an efficient remedial effect.

Keywords: Antidiabetic, Diabetic, Herbal Drug

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30 Securing the Future: Implementing a Zero-Trust Framework in U.S. Critical Infrastructure Cybersecurity

Paper ID V10I3-1221 · Pages 193-202 · Cybersecurity

Ayokunle Akinsanya, Research Scholar, Bowie State University Bowie, Maryland

This paper examines the growing cyber threats facing the United States' vital infrastructure, particularly those posed by state-sponsored threat actors. It discusses the significant risks these threats pose to economic stability and national security. It highlights the difficulties in protecting U.S. critical infrastructures from the constantly advancing and complex strategies employed by cybercriminals, who take advantage of the fundamental flaws in traditional security models. Furthermore, the paper presents an overview of the cyber threat environment in the United States and explains the strategies, tactics, and fundamental values for implementing Zero Trust security in critical infrastructure sectors. The study underscores the importance of technological solutions, security policies, governance, risk management, and the role of human elements in creating a robust cyberinfrastructure. Adhering to internationally recognized standards such as NIST, ISO/IEC 27001, and OWASP, this framework aims to bolster U.S. cyber defenses against a broad spectrum of cyber

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threats, thereby enhancing economic stability, national security, and the continuous delivery of critical services. The findings of this research have significant implications for the future of U.S. critical infrastructure security, emphasizing the need for a proactive and comprehensive approach to cybersecurity in the face of evolving threats.

Keywords: Cyber Threats, National Security, Zero-Trust Model, Ransomware, Critical Infrastructure

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31 Artificial Intelligence in Healthcare Supply Chains: Enhancing Resilience and Reducing Waste

Paper ID V10I3-1222 · Pages 203-217 · Medical Informatics

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Efficient inventory management is crucial in the healthcare industry to ensure the availability of essential medications and medical supplies while minimizing wastage and reducing costs. This study explores the role of Artificial Intelligence (AI) in optimizing inventory management and enhancing supply chain resilience within healthcare settings. By leveraging AI-driven solutions, healthcare organizations can improve demand forecasting, streamline supply chain operations, and minimize medication waste. Incorporating AI technologies, including machine learning and predictive analytics, allows for more precise demand forecasting, minimizes the chances of both overstocking and stockouts, and enhances overall operational efficiency. The research further examines the theoretical frameworks of Resource-Based View (RBV) and Systems Theory to highlight the strategic and systemic benefits of AI in healthcare inventory management. Empirical evidence from recent studies underscores the potential of AI to transform healthcare supply chains, promoting sustainability and improved patient care. This study employs a survey research design targeting healthcare professionals in the United States, with data analyzed through machine learning algorithms to identify key patterns and insights. Ethical considerations, including data privacy and informed consent, are meticulously adhered to, ensuring the integrity of the research process.

Keywords: Artificial Intelligence, Inventory Management, Healthcare Supply Chain, Waste Reduction, Supply Chain Resilience, Demand Forecasting, Machine Learning, Predictive Analytics, Resource-Based View, Systems Theory

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32 Blockchain Technology for Social Good

Paper ID V10I3-1229 · Pages 218-223 · Blockchain

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What does our subconscious think of when we hear “Technology”? Well, something futuristic, exciting, or entertaining on the bright side or something destructive for nature and the world on the negative side, but what if there is an emerging technology that can change this prevailing perception and change the world better? Well, this is nothing unknown but what we all have heard of at least once in our lives- blockchain. Yes, you heard that right. It is not just related to cryptocurrency or decentralization, but to something which can change our world forever. Blockchain can act as a digital weapon against many social uneasiness present around us today, like plastic accumulation in landfills, misuse of donations, centralized money system, and much more.

Keywords: Blockchain Technology, Supply Chains, Waste Management, Transparency, Accenture

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33 Leveraging Artificial Intelligence for Combating Money Laundering and Enforcing Anti Corruption Strategies: Challenges for Anti Corruption Agencies, Financial Regulators And Recommendations for Future

Paper ID V10I3-1219 · Pages 224-231 · Law And Enforcement

Dr Hemant Garg, Independent Researcher, International Financial Services Centres Authority, GIFT City ,Gandhinagar, Gujarat India

Money laundering poses a significant threat to the global financial system by enabling illicit activities that affect the economy globally. In recent years, the rise of artificial intelligence (AI) has offered new opportunities to enhance the detection and prevention of money laundering activities. This work of the Author is an attempt to analyze and overview money laundering, highlighting the importance of combatting this criminal activity and exploring the role of AI in addressing this critical issue. The first section explains money laundering and the second section describes the role of AI in detecting the same along with a brief description of the workings of the AI model to detect such instances. The third section gives an overview of anti-corruption efforts in India and the fourth section talks of integration of AI in Anti Corruption Bureaus of India. Subsequently, challenges in implementing AI in Anti Money Laundering (AML) efforts are discussed. The sixth section discusses recommendations for integrating AI in anti-corruption and AML Strategies. Based on the research, the author has concluded that while AML AI is being used extensively in financial institutions, the pace is not the same for the ACBs of the country. Significant progress can be made to develop and integrate AI specifically for AML in governmental institutions.

Keywords: Anti Money Laundering, Anti Corruption, Artificial Intelligence, Anti Corruption Bureau, Data Pattern

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34 Development of Biophotovoltaic System for Power Generation

Paper ID V10I3-1236 · Pages 232-236 · Engineering (energy)

Milan Kadari, Research Scholar, HKBK College of Engineering, Bengaluru, Karnataka

Microbial fuel cells and biophotovoltaic systems (BPVs) are similar in that they use an anode and oxygenic photosynthetic bacteria to produce an extracellular electrical current that is triggered by light. Throughout the

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past few decades, advancements in wiring schemes and multiple generations of electrode development have contributed to a significant advancement in the study and application of BPVs. There have been reports of power densities as high as 0.5 W m−2, which can power small electrical devices like digital clocks. The biophotoelectrochemical phenomena can now be further utilized to answer biological concerns about the organisms thanks to advancements in standardization. With an emphasis on biological materials, electrode design, and interfacial wiring concerns, we hope to give biologists and electrochemists a comprehensive overview of the evolution of BPVs and suggest future directions for the area.

Keywords: BPV- Biophotovoltaic, Micro-Organism,Eukaryotic Micro-Algae, Cyanobacteria.

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35 Elements to Consider while Choreographing of Natya Production for Individuals with Intellectual Challenges

Paper ID V10I3-1233 · Pages 237-239 · Performing Arts

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Natya, an essential skill for all, is particularly beneficial for individuals with intellectual challenges. These individuals often struggle to express themselves appropriately, and Natya helps them channel their emotions constructively. Theatre arts, being interactive, engagingly facilitate learning. Natya combines literature, music, and drama to create a holistic art form that aids in communication and emotional expression. This approach is more effective than theoretical methods for individuals with special needs.

Keywords: Natya, Dance, Drama, Music, Special Needs, Emotions

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36 Assessing the Utilization of Building Information Systems for Data-Driven Decision

Paper ID V10I3-1231 · Pages 240-243 · Information Systems And Heritage Preservation

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Heritage buildings face various challenges such as degradation, structural deterioration, and loss of historical significance over time. Traditional preservation methods which involve manual processes and paper-based documentation that are consistent with historical construction techniques are inefficient or insufficient in addressing the challenges leading to the preservation of heritage building.

Keywords: Building Information Systems, Heritage Buildings, Historic Building Information Modeling (H-Bim), Building Information Modeling, Heritage Preservation

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37 Economic Policies on Bank Lending In India

Paper ID V10I3-1246 · Pages 250-254 · Economics

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This research paper examines the various sources of credit available to the poorer sections of society and their impact on employment, GDP, and foreign direct investment in India. The formal sector meets only about half of the total credit needs of rural people, with the remaining needs being met by informal sources (World Bank, 2023). Formal credit must be distributed more equitably to benefit the poor with cheaper loans (RBI, 2023). Banks and cooperatives should increase their lending, particularly in rural areas, to reduce dependence on informal credit sources (Kohli, 2022). While the expansion of formal sector loans is necessary, ensuring that everyone receives these loans is equally important (Government of India, 2023).

Keywords: Bank Lending, Affordable Credit, SHG Policy

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38 Direct Composite Veneers using Omnichroma-Treatment of Generalized Dental Fluorosis with Minimally Invasive Technique

Paper ID V10I3-1244 · Pages 255-260 · Conservative Dentistry

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The significance of aesthetic dental restorations in fostering the emotional and psychological well-being of patients cannot be overstated. Dental Fluorosis in anterior teeth often pose a cosmetic concern in numerous instances. Achieving precise color and shade matching between resin composite and natural teeth stands out as the primary objective for patients in assessing treatment quality. A promising new product recently introduced to the market is Omnichroma by Tokuyama Dental, which offer a comprehensive color-matching concept. Unlike conventional composites that rely on dyes or pigments, OMNICHROMA utilizes "smart chromatic technology" to capture the structural color of its environment. This article showcases the esthetic rehabilitation of anterior teeth affected by dental fluorosis and decay using Omnichroma.

Keywords: Dental Fluorosis, Esthetic, Shade, Omnichroma

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39 Exploring Black Holes: A Journey through General Relativity, String Theory, and Beyond

Paper ID V10I3-1238 · Pages 261-266 · Physics

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Black holes have a significant impact on shaping the behavior and development of galaxies and the universe in general. Despite being theoretically predicted and having plenty of observational evidence supporting their

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existence, black holes remain incomprehensible, leading to the investigation of different theoretical frameworks for deciphering their enigmas. This paper explores the complex terrain of black holes, discussing General Relativity, String Theory, and how they interact. Moreover, the deteriorating and captivating characteristics of black holes in string theory are discussed and the significance of T-symmetry in comprehending their behavior is examined, referencing relevant sources and theoretical concepts to offer a thorough look at this new trend in black hole physics. Using advanced X-ray imaging methods, astronomers can examine black hole environments in great detail, providing new insights into how matter behaves under extreme gravitational circumstances.

Keywords: Black Holes, Stephen Hawking and Hawking Radiation, Theory of General Relativity, Fuzzball Proposal, Holographic Principles, String Theory, T-symmetry.

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40 A review on Virtual Reality

Paper ID V10I3-1225 · Pages 267-270 · Artificial Intelligence

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Virtual reality (VR) immerses users in computer-generated environments, offering experiences that simulate physical presence in real or imagined worlds. Through headsets and sometimes additional accessories like gloves or controllers, users interact with and navigate these environments in real-time. VR technology combines computer graphics, sensory feedback, and motion.

Keywords: Virtual reality, computer-generated environment, real-time.

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41 Analysing Tourism Development in Ayodhya

Paper ID V10I3-1204 · Pages 271-280 · Tourism

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Ayodhya’s eminence in India is multi-faceted. It’s not just historically important but holds significant importance culturally, politically, and economically. It has been a major source of fascination, especially for Hindus, and that interest has risen manifold after the recent construction of the Ram Temple. The current study delved into three major aspects concerning tourism in Ayodhya by discussing the challenges faced by the administration in catering to the tourism industry there, moving to the investigation of the employment opportunities due to increased flocking of tourists, and finally the stance of the government amidst all this. It was found that urban planning strategies are paramount to molding the tourism industry in Ayodhya. The government’s efforts in the direction of effective collaborations and working in harmony with the active players present there can work

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wonders to better the state of the city as well as the profitability of the tourism sector. One of the challenges that Ayodhya faces as a tourism spot is that of security which was also concluded by the paper. Sustainable tourism practices came out to be the highlight reflecting the need to improvise the current practices. The chi-square test was used to form inferences about the same.

Keywords: Ayodhya Tourism, Ram Janmabhoomi, Urban Planning, Sustainable Tourism, Cultural Heritage

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42 EasifyMart: An E-Commerce Platform

Paper ID V10I3-1180 · Pages 281-284 · Computer Science

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This paper looks at different aspects of online shopping, such as new trends and areas that need more research. It uses information from six other research papers about online shopping in India and Bangladesh. The study finds important areas to explore further, like personalizing shopping experiences, using new technology like blockchain and voice shopping, and making sure online shopping is ethical and sustainable. The paper aims to help people understand how online shopping is changing and suggest ideas for future research.

Keywords: Component, Formatting, Style, Styling, Insert

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