International Journal Of Advance Research, Ideas And Innovations In Technology

VOLUME 9 - ISSUE 6

IJARIIT

SPECTRUM

International Journal of Advance Research, Ideas and Innovations in Technology

November-December, 2023

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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 9, Issue 6 (November-December, 2023). This edition brings together 36 papers by 93 authors from 36 institutions. Each entry links to the abstract and the full paper.

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e-ISSN 2454-132X

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ABSTRACTS

1 Impact of marketing mix on the retailers' preference towards cookies

Paper ID V9I6-1145 · Pages 1-9 · Marketing

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In this research, the researchers try to find the retailer preference towards the biscuits industry in Chennai. The main objective is, to find the retailer's satisfaction, measuring the effect of promotional mix and retailers' perception towards biscuits and cookies. The data have been collected using a structured Questionnaire from the 125 retailers and a convenience sampling technique method is being used. The research design used in this study is Descriptive in nature. In this research, the SPSS software is used to analyze Data. The brand is the influence factor in purchasing biscuits and cookies. Retailers are satisfied with the cookie's quality and brand name of the biscuits, majority of the retailers have maintained a smooth relationship with their dealers.

Keywords: Retailer Satisfaction, Retailer Perception, Promotional Mix, Relationship, Retailer Preference

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2 Assessing the effects of social isolation on elderly individuals

Paper ID V9I6-1136 · Pages 10-22 · Psychology

Lakshita Popli, Student, Delhi Public School, New Delhi, Delhi

Loneliness and social isolation, prevalent among older adults, have profound and often interconnected effects on physical and mental health, leading to increased mortality, depression, and cognitive decline. This paper reviews the literature on social isolation and loneliness in seniors. Key factors contributing to social isolation include the death of a spouse, physical relocation, retirement, changes in family structures, changes in mobility, chronic health problems, household income, race, ethnicity, gender, and sexual orientation. These factors have varying impacts on the social well-being of older adults. Research suggests that subjective social isolation has a stronger link to mental health, while objective social isolation is more strongly related to physical health. Both social isolation and loneliness are associated with higher rates of depression and psychological distress among seniors. Understanding social isolation and loneliness in seniors is crucial for developing targeted interventions and support systems to enhance the well-being of this growing demographic.

Keywords: Mental Health, Older Adults, Loneliness, Social Isolation

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3 Cloud Migration Challenges for IP PBX in Critical Hospital Environments

Paper ID V9I6-1153 · Pages 23-30 · Cloud

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Migrating to the cloud for IP PBX systems in critical environments like hospitals is a transformative endeavor offering significant benefits, but it also introduces a unique set of challenges. This article delves into the complexities associated with this migration, addressing key concerns such as data security and privacy, reliability, network connectivity, cost management, legacy system integration, compliance with healthcare regulations, and user training and adoption. By proactively recognizing and effectively tackling these challenges, hospitals can harness the potential of cloud-based IP PBX systems to enhance patient care, streamline operations, and maintain the highest standards of security and reliability.

Keywords: Cloud Migration, IP PBX Systems, Hospital Communication, Data Security

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4 Optimizing waste recycling through data science: a deep learning approach with Tensorflow

Paper ID V9I6-1167 · Pages 31-39 · Data Science

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The intricate relationship between recycling practices and the generation of solid waste emphasizes the multifaceted character of sustainable waste management. A comprehensive comprehension of these dynamics is crucial for formulating specific interventions and policies that optimize the positive effects of recycling on our environment. This research explores the application of deep learning, specifically utilizing TensorFlow, in the domain of waste classification for enhanced waste recycling. The study focuses on the efficient categorization of diverse waste materials, including cardboard, glass, trash, metal, and plastic, through the implementation of advanced neural networks. By leveraging TensorFlow's capabilities, our research demonstrates the successful development and deployment of deep learning models that exhibit accurate and reliable waste classification. The utilization of deep learning model was able to select accurately the most important types of garbage worthy for recycling processes. And not only streamlines recycling processes but also addresses the environmental challenges associated with inefficient waste management. The findings finally highlight the transformative potential of integrating cutting-edge technologies into waste sorting systems, paving the way for a more sustainable and eco-friendly approach to waste disposal. This research contributes to the ongoing efforts in environmental conservation by presenting a viable solution to enhance waste recycling practices through the power of deep learning.

Keywords: Recycling, Solid Waste Generation, Machine Learning, Deep Learning, Tensorflow, Environmental Impact

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5 Efficient establishment of foreign manufacturing units in India: utilizing operation research approaches amidst changing import regulations

Paper ID V9I6-1158 · Pages 40-49 · Operations Research Amidst New Import Policies.

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With increasing regulatory policies from countries, companies have to find an efficient way to set up their manufacturing units in other countries as well. Currently majority of the companies set up their manufacturing units in China as they are able to manufacture products at a cheaper price, however this will not work for the long term, as if the companies intend to sell their products in countries with restrictive import policies, they will have to diversify and set up their manufacturing units in that/those countries as well. To select the right location for setting up a manufacturing unit, a company must look into what we classified as Internal and External factors which we will be going in-depth further into the research paper. This research paper sets out to provide a framework to those companies that are looking to set up their own manufacturing units in a country using operation research tools such as Linear programming which includes visualizing the “Internal” factors as a transportation problem. One probable limitation of this research paper is assuming that the current demand for the products in the economy will remain equal to the forecasted demand or demand in the coming years after setting up the manufacturing units, demand will be used in the linear programming problems later in this research paper.

Keywords: Manufacturing Unit, Restrictive Import Policy, Cheaper Price, Linear Programming Problem, Comprehensive Framework, Optimal Location.

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6 Improvised approach to Deepfake detection

Paper ID V9I6-1183 · Pages 50-56 · Computer Science - Artificial Intelligence

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Hiya Kulasrestha, Student, Vellore Institute of Technology, Vellore, Tamil Nadu
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Deepfakes are realistic, human-synthesized videos that are incredibly simple to produce thanks to the advent of sophisticated algorithms fueled by advances in the field of deep learning. Deepfakes are being used to create fictitious news stories about terrorism, politics, and retaliation in order to incite societal unrest. The development of efficient techniques for identifying deepfakes is imperative, given the mounting concerns surrounding them. Our work in this field offers a brand-new deep learning-based method that effectively distinguishes between authentic videos and artificial intelligence-generated phony ones. Our technique can identify deepfakes that are both reenactments and replacements. To counter the threat posed by artificial intelligence (AI), we suggest a system that makes use of AI. In order to train an InceptionV3 model to

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categorize films as either real or manipulated, depending on whether they have undergone any kind of alteration, this method uses an MTCNN neural network to extract frame-level information. We assess our method on a large-scale balanced and mixed data set in order to mimic real-time scenarios and improve the model's performance on real-time data. This dataset was painstakingly created by combining multiple available datasets.

Keywords: MTCNN, CNN, InceptionV3, CLAHE, Deepfake Detection, Facial Embeddings

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7 Comparative phytochemical and in vitro antioxidant studies of ethanolic, hydroethanolic, and aqueous root extracts of rhinacanthusnasutus(l.) Kuntze

Paper ID V9I6-1178 · Pages 57-66 · Biotechnology

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Rhinacanthus nasutus(L.)Kuntze (Nagamalli) has long been used in traditional medicine to alleviate abscess pain, tinea versicolor, pruritic rash, ringworm, and skin diseases. The current study sought to explore the existence of numerous phytochemicals as well as the total phenolic, flavonoid, and tannin levels of Rhinacanthus nasutus. In qualitative analysis, the various phytochemical compounds were screened using standard methods. In quantitative estimation, the total phenolic content of each extract was 74.75, 82.47 & 61.25 mg of GA/g extract, the total flavonoid was 368.2, 512.25&160.6 mg of Ru/g extract, and the total tannin was 17.5, 38.5&22.6 mg of CTN/g extract respectively. In-vitro antioxidant activity of ethanolic, hydroethanolic, and aqueous extracts of Rhinacanthus nasutus root was determined by DPPH free radical scavenging assay and determination of total antioxidant activity. The hydroethanolic extract had shown very significant DPPH (1, 1-diphenyl-2-picryl-hydrazyl) radical scavenging activity compared to other extracts. In the DPPH free radical scavenging assay IC50 value of alcoholic, hydroalcoholic, and aqueous root extracts was found to be 282.28, 114.62, and 597.96 µg/mL respectively. The total antioxidant activity of the Rhinacanthus nasutus root extracts was calculated from the calibration curve of ascorbic acid, the results show the antioxidant activity of ethanolic, hydroethanolic, and aqueous extracts were 37.675, 50.85, and 28.225 mg of AA/g extract respectively. The quantitative phytochemical and antioxidant assays showed significant activity for hydroalcoholic extract when compared with ethanolic and aqueous extracts. Thus the present study revealed the comparative phytochemical and in-vitro antioxidant potential of ethanolic, hydroethanolic, and aqueous root extracts of Rhinacanthus nasutus.

Keywords: Rhinacanthus Nasutus, Phenolics, Flavonoids, Tannins, Dpph, Antioxidant

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8 Design and testing of solar charged voice recognized Arduino car

Paper ID V9I6-1192 · Pages 67-72 · Embedded Systems

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This research study is an advent of voice recognition technology that has ushered in a new era of human-machine interaction, enabling seamless and intuitive control of various devices and applications. In this research paper, we present a novel application of voice recognition technology in the realm of robotics - a Voice-Activated Arduino Car Control System. This system combines the power of Arduino microcontrollers, voice recognition software, and motor control mechanisms to create a versatile and user-friendly platform for controlling a robotic car using voice commands. The primary objective of this research is to design and implement a voice-activated control system that enhances the accessibility and usability of robotic cars. To achieve this, we have developed a comprehensive system architecture comprising hardware and software components. The hardware includes an Arduino microcontroller, motor drivers, sensors, and a microphone. At the same time, the software incorporates a voice recognition algorithm, and the solar panel is used to recharge the battery which is user-friendly.

Keywords: Voice Control, Automated Car, Human-Machine Interaction, Solar Charged

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9 To adorn home linen using doodle art

Paper ID V9I6-1190 · Pages 73-89 · Textile

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Doodle art, a spontaneous and free expression of creativity, transforms the ordinary into the extraordinary. Unbound by rules, doodle art emerges from the margins of notebooks to captivate with its whimsical lines and imaginative patterns. This unique form of self-expression invites individuals to unleash their creativity, turning idle moments into vibrant canvases of personal inspiration. Whether intricate or simple, doodle art celebrates the beauty found in spontaneity, inviting artists to explore the limitless possibilities of their imagination. Doodle design converted into a screen for screen printing. Screen printing Originating in ancient China, this method has evolved into a dynamic process where ink is meticulously pressed through a mesh screen to breathe life into designs on diverse textiles. Screen printing transforms surfaces into vibrant showcases of visual beauty. These doodle design screen printing is implemented into home furnishing. Home furnishings, the soul of interior design, weave comfort and style into the fabric of our living spaces. Home furnishings breathe life into houses, transforming them into homes. This realm of design is a tapestry of functionality and aesthetics, where every piece tells a story and contributes to the overall ambiance of a space.

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Keywords: Doodle Art, Screen Printing, Home Linen, Textile-Home Furnishing

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10 Exploring public awareness and practices regarding toothbrush contamination and disinfection: A cross-sectional survey

Paper ID V9I6-1179 · Pages 90-95 · Dentistry

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BACKGROUND: Oral hygiene plays a pivotal role in maintaining overall health, with toothbrushes being a fundamental tool in daily dental care. However, little attention has been given to the critical issue of toothbrush contamination and its implications for public health. This study aims to understand the knowledge, attitude, and practice regarding toothbrush contamination and disinfection among the public. MATERIALS AND METHODS: This was a cross-sectional questionnaire study consisting of 15 questions that cover points of knowledge, attitude, and practice towards contamination and disinfection of toothbrush reporting was developed in Google form format among 350 participants who gave consent to participate in this study. The collected data was analyzed using the SPSS version 26 software package. RESULTS: There was a statistically significant gap regarding toothbrush contamination, mode of storing the toothbrush, and various practices used for toothbrush disinfection among each participant. It was also seen that general awareness and practice of toothbrush disinfection was higher among female participants in the study, which was also a statistically significant result. CONCLUSION: Understanding these aspects is essential in promoting healthier oral hygiene practices and subsequently improving public health. This study underscores the need for targeted educational campaigns and emphasizes the role of individuals in safeguarding their oral well-being.

Keywords: Contamination, Disinfection, Frequency Of Changing Toothbrush, Storage

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11 Study of statement on temperature and rainfall of Maharashtra, year 2022.

Paper ID V9I6-1184 · Pages 96-101 · Science

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In dry farming areas, rainfall is considered to be an important ecological input to determine the farming types as well as its efficiency. This weather element also describes the surface and sub surface water resources of a region. In view of deterministic influence exerted by rainfall on agriculture especially in dry areas, the present paper attempts to present the rainfall and temperature distribution in Maharashtra. The analysis has been made at rain-gauge station level for the year 2022.

Keywords: Rainfall, Temperature, SPI

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12 Fibonacci sequence in music

Paper ID V9I6-1172 · Pages 102-108 · Mathematics

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Music, with its harmonious melodies and rhythmic patterns, has the power to soothe the mind and delight the ear. Within the realm of Hindustani classical music, the core elements include raags, sargams, alaps, and tans, which have played a significant role in not only shaping my life but also in creating some of my happiest memories. For approximately six years, I have dedicated my time to studying various musical genres, with a specific focus on Hindustani classical music. I derive immense enjoyment from this passion, occasionally picking up the guitar and keyboard, and actively participating in my school's choir. However, music is much more than what meets the eye; it encompasses a broad spectrum of sounds, from the tinkling of chimes to the soothing rush of crashing waves.

Keywords: Mathematics, Music, Golden Ratio, Fibonacci Sequence

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13 Regional environmental assessment status of granite mining in Karimnagar districts

Paper ID V9I6-1204 · Pages 109-117 · Geology

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Granite is a minor mineral; it is a major contributor in foreign exchange earnings. India is the second largest exporter of raw granite after China and ahead of Brazil and South Africa. India ranked fifth in the export of processed (value added finished) product. Granite contributed 4.51% exports value of all ores and minerals in 2007-08. The exports value of granite was next to diamond and iron ore during 2007-08. (IMYB-2010). Telangana State is one of the important Granite producing states unique varieties are Jet black granite of Warangal and Khammam districts and Tan brown variety of Karimnagar district. Mining operations are Manual, Semi-Mechanised and Mechanised. Dimensional stone mining generates enormous waste, sometimes upto 75% to 85%. Land degradation is due to voids created by mining; Creation of external waste dumps, areas covered by site services, plant and colony etc.

Keywords: Granite, Dimensional Stone, Karimnagar, Mining, Land Degradation

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14 Experimental Studies in Plate Heat Exchanger

Paper ID V9I6-1201 · Pages 118-122 · Mechanical Engineering

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At present plate heat exchanger's (PHE's) are being used extensively in the chemical, process and allied industries due to their numerous advantages. Heat transfer and associated frictional pressure drop in PHE are investigated experimentally in this study. The applied PHE is 14 plate, 2 fluid and single pass-flow heat exchanger in which fluids flow in counter flow direction. Heat transfer and pressure drop data were obtained for water flow rates varying between 0.0168 kg/s to 0.3378 kg/s. In this flow range increasing flow rates from 0.0168kg/s to 0.3378 kg/s (Increase in Reynold number from 85 to 1640) caused an increase in the pressure drop from 88 Pa to 10957 Pa. Empirical correlations are proposed to correlate the present data for the heat transfer coefficient and friction factor in terms of Reynolds number and Prandtl number.

Keywords: Plate Heat Exchanger, Chevron Plates, Heat Transfer, Pressure Drops, Correlations, Experimentation.

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15 Numerical (CFD) studies in twisted square duct

Paper ID V9I6-1200 · Pages 123-129 · Mechanical Engineering

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CFD analysis of steady fully developed laminar flow inside twisted duct of square cross section flow area is studied for Re range of 100 - 2000. A commercially available software is used for the analysis. Twist ratio used are 2.5, 5, 10 and 20.Maximum average f.Re values were observed for a twist ratio of 2.5 and Re of 2000. It is observed that the average f.Re values are not constant rather are function of Re and twist ratio. Average f.Re values are correlated with swirl parameter. Local distribution of f.Re across a cross-section is further analysed. Comparison of average f.Re values of twisted square duct with straight square duct is also done. Keyword: Twisted duct, laminar flow, twist ratio, Periodic flow, swirl parameter.

Keywords: Twisted Duct, Laminar Flow, Twist Ratio, Periodic Flow, Swirl Parameter.

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16 From Risk to Resilience: Strengthening Cyber security in Financial Institutions

Paper ID V9I6-1197 · Pages 137-145 · Applied Financial Economics

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The study examines the escalating cyber threats facing financial institutions, particularly the surge in state-sponsored attacks and vulnerabilities exacerbated by the pandemic's shift to remote services. Notably, ransomware incidents have surged, and transnational crime groups now exploit specialized tools. Despite robust regulatory frameworks like GLBA, FFIEC, PCI-DSS, and NIST Cybersecurity, financial entities grapple with defending against evolving threats. The study emphasizes the imperative of prioritizing cyber resilience strategies and strict adherence to regulations. Advanced measures such as encryption, machine learning, and real-time monitoring are proposed to fortify security measures. It advocates for continuous staff training to enhance awareness and adherence to evolving cybersecurity practices. Moreover, the article underscores the significance of regular risk assessments for identifying vulnerabilities and ensuring timely updates to security measures against evolving threats. Collaboration among institutions is advocated to strengthen collective

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defenses, enabling a unified response to cyber incidents and bolstering the overall cybersecurity posture of the financial industry. In essence, the article highlights the necessity for financial institutions to proactively embrace comprehensive strategies that encompass resilience, regulatory compliance, technological advancements, and collaborative efforts to effectively combat escalating cyber threats.

Keywords: Cybersecurity, Financial Institutions, Cyber Threats, Cyber Resilience, Ransomware, State-sponsored Attacks, Financial Sector, Regulatory Framework, Encryption, Cyber Risk.

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17 A study to assess the effectiveness of video-assisted teaching programme regarding the hazards of plastics and prevention of its usage among the adults residing in Arumanai at Kanniyakumari district

Paper ID V9I6-1210 · Pages 146-151 · Nursing

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“Reuse it or Refuse it. Beat Plastic Pollution.” Plastics are used on a daily basis throughout the world. Plastics are inexpensive, lightweight, strong durable, corrosion-resistant materials, with high thermal and electrical insulation properties. Substantial quantities of plastic have accumulated in the natural environment and landfills. Around 10 percent by weight of the municipal waste stream is plastic. Pre-experimental one-group pretest-posttest design for selecting samples. The setting of the study was a rural community in Arumanai in Kanniyakumari District. The sample consists of 170 adults who met the inclusion criteria. A convenience sampling technique was used for the selected samples. Ethical aspects of the study were maintained throughout the study. A modified structured questionnaire was used as a tool for data collection. The tool's reliability was tested before the pilot study. The first pretest was conducted to assess the level of knowledge regarding the hazards of plastics and the prevention of their usage. The video-assisted teaching program was implemented in the group for 25 minutes and a posttest was conducted on the 7th day, to reassess the level of knowledge regarding the hazards of plastics and prevention of its usage. The data gathered were analyzed by both descriptive and inferential statistics based on the objectives of the study. The study revealed that 42.9% of adults had excellent knowledge, and 57.1% had very good knowledge regarding the hazards of plastics and the prevention of their usage. The mean level of knowledge regarding the hazards of plastics and the prevention of their usage increased from 11.2 to 19.8 after the implementation of the video-assisted teaching program. The mean increase was statistically significant at 0.01 level (t=59.174, df= 16). There was a significant effect of the video-assisted teaching program regarding the hazards of plastics and the prevention of their usage among adults residing in Arumanai.

Keywords: Effect, Video Assisted Teaching, Hazards of Plastics, Prevention, Usages.

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18 Enhancing denture esthetics using magnet retained cheek plumper- A case report

Paper ID V9I6-1174 · Pages 152-155 · Prosthodontics

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This clinical report describes a technique to improve support for sunken cheeks using magnet retained detachable acrylic cheek plumpers. The new generation of magnets with improved technology provides sufficient denture retention for clinical application. However, further follow-up may be necessary to ascertain the long-term usefulness of the magnet-retained prosthesis, because of corrosion and further loss of magnetism.

Keywords: Cheek, Cheek plumper prosthesis, Denture esthetics, Detachable, Device, Esthetics, Plumper, Prosthetic, Removable partial denture, Sunken.

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19 Extensive research on the multiple ways in which drones are employed in the field of construction management

Paper ID V9I6-1211 · Pages 156-161 · Construction Managements

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Drone technology has made its way into various sectors, including the construction industry. By utilizing drone technology, project manager can enhance their communication and improve project efficiency. This study aims to delve into the potential of drones in construction and shed light on the benefits and impacts of this emerging trend in construction management. Employing lidar technology, this review article analyses existing knowledge in the field and examines the effects of drone usage in the construction industry. Additionally, the article explores the advantages of incorporating drones into construction projects, taking into account various dimensions of Project management. To fulfill the research objective, a thorough analysis is conducted to uncover the wide-ranging applications of drones throughout the construction project lifecycle. This analysis not only entails identifying the benefits, challenges, and costs associated with their usage but also delving into the considerations that need to be taken into careful account.

Keywords: Drone Technology, Unmanned Aerial Vehicle (UAV), Lidar Drone Technology, Construction Technology Trends, and Construction Stages, Project Management, 3d Modeling

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20 A relationship between the burning number of a graph and its domination number

Paper ID V9I6-1213 · Pages 162-164 · Mathematics

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Graph burning, introduced by Elham Rashanbin in 2016, has gained significant research attention in recent years. This innovative concept involves iteratively selecting nodes in a given graph to 'burn' at each time step. The previously burnt nodes then ignite the adjacent nodes, and this process continues until all nodes are burnt. The minimum number of nodes required to ignite the entire graph is known as the burning number. Similarly, the domination number of a graph refers to the size of the smallest vertex subsets that ensure every vertex in the graph is either part of the subset or adjacent to a vertex within the subset. In this paper, we demonstrate that if the domination number of a graph is at least 6, then its burning number is smaller than or equal to its domination number.

Keywords: Graph, Domination Number, Burning Number

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21 Insider Trading in India

Paper ID V9I6-1214 · Pages 165-169 · Corporate Law

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This research paper delves into the critical issue of insider trading within India’s securities markets and evaluates the effectiveness of the Securities and Exchange Board of India (SEBI) regulations, specifically the SEBI (Prohibition of Insider Trading) Regulations of 2015. Insider trading’s profound impact on market integrity and investor trust is highlighted, with a focus on the transition from the earlier 1992 regulations to more recent 2015 regulations. These rules are intended to address the shortcomings of the prior ones and reduce the likelihood of insider trading. Indian company legislation mandates the creation of a yearly account that summarizes the business's financial results for the previous year. It also mandates that the business disclose its assets and obligations at the conclusion of each bookkeeping period. To guarantee accountability in the business's administration, this has been made available. This meeting is held to monitor and evaluate the operations of the business. Nonetheless, some data is known to the employers of the business straightforwardly or who are generally associated with it before it is really disclosed. For instance, a chartered accountant audits the company's financial data; business directors make decisions; etc. Because they have access to this price-sensitive, unpublished information, those associated with the companies are in a better position than those who do not. insider trading, one of the most severe charges in the securities market, is the result of such a transaction. Considering this, the current study paper provides a critical analysis of SEBI's 2015 insider trading regulations and examines the concept of insider trading in India. The study also underscores the significance of annual reporting and discloser requirements imposed by Indian company legislation, which plays a crucial role in transparency and accountability. Furthermore, it examines the susceptibility of individuals associated with companies to access sensitive, price-sensitive information and the consequent risk of insider trading. Through case studies, the paper illustrates real-world examples of insider trading in India and its

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regulatory challenges. Ultimately, the study aims to provide insights into the current state of insider trading regulations in India and suggests areas for improvement to strengthen market integrity and investor protection.

Keywords: SEBI, Securities Market, Regulations, Insider

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22 AcciSense–Real-time Accident Detection and Emergency Response System

Paper ID V9I6-1220 · Pages 170-174 · Automation And Ai Communication System

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The AcciSense project introduces a groundbreaking solution that combines cutting-edge technology and intelligent algorithms to achieve real-time accident detection and streamline emergency response on highways. Our primary objective is to swiftly identify accidents and automate the process of notifying nearby hospitals, thereby enhancing road safety and increasing the likelihood of timely medical assistance during critical situations. Through the integration of advanced technologies and intelligent algorithms, AcciSense aims to revolutionize the current emergency response system on highways. By automating the process of dispatching ambulances to accident locations, we address the pressing challenge of minimizing response time and improving the overall effectiveness of emergency medical services. This project underscores the crucial role of technology in augmenting road safety and saving lives. AcciSense's innovative approach to accident detection and automated emergency response has the potential to make our roads safer for all travelers.

Keywords: Accisense, Accident Detection, Emergency Response, Highway Safety, Real-Time, Intelligent Algorithms, Automated Ambulance Dispatch, Technology Integration.

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23 Bank Mergers- Are they really a blessing for the Indian Economy

Paper ID V9I6-1222 · Pages 175-188 · Economics

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A bank merger occurs when two banks combine their resources so that they can operate as one bank in the future. Banks have been able to implement more effective business strategies, diversify their geographic activities, and scale up their operations due to mergers. In India, bank mergers first took place in the 1960s as a strategy to rescue weaker banks while simultaneously safeguarding the interests of customers. The desire to create an Indian bank that can compete with global giants in the post-liberalization period has existed since 1990. As the pillars of our economy, banks are regularly pushed to combine in order to grow internationally and foster peace, which improves the flow of money in our economy. The Indian banking sector is now thought to be expanding quickly and evolving into a vibrant sector. Through mergers and acquisitions, the industry is given a new dimension that has helped banks rise to the top while providing enormous value to shareholders. The merger, which resulted in the consolidation of 27 public sector banks into 12, had as its main goal the

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establishment of next-generation banks and the eventual realization of a trillion-dollar economy. It is evaluated in this paper by analyzing its impact on the banks' productivity, personnel, and customers.

Keywords: Mergers, Acquisition, Amalgamation, Licensor, Licensee, Franchise Business, Catalyst, Market Competitiveness, Central Bank, Commercial Bank, Co-Operative Bank, Development Bank, Specialized Bank, Savings Account, Biometric Technology, Market Capitalization, Integration Issues, Customer Discomfort, Portfolio, Stock Holders, MRTP Companies

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24 Unlocking the Future Potential of Asteroid Exploration

Paper ID V9I6-1225 · Pages 189-192 · Space Sciences

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For centuries, asteroids have been a source of mystery and exploration, representing ancient remnants of the solar system's formation. Recent decades have witnessed a surge in exploration: from distant flybys to close-up encounters and even sample returns, but this is being outpaced by the rapid depletion of resources here on Earth. This paper outlines the evolution of asteroid missions, highlighting past discoveries and laying the groundwork for future endeavors. It explores the missions that paved the way and expanded our understanding of these celestial bodies, revealing water ice, precious metals, and organic compounds. Beyond scientific pursuits, these discoveries can also facilitate resource utilization, fueling interest in asteroid mining. However, technological and economic considerations, alongside environmental and ethical concerns, necessitate careful planning and responsible development of this emerging field.

Keywords: Asteroids, Potential Targets, Mining, Considerations, Implications.

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25 Quantitative approaches to forecasting the economic impact of technological disruptions in making informed decisions for sustainable economic growth in the U.S.

Paper ID V9I6-1224 · Pages 193-201 · Financial Econometrics

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The study is focused on forecasting economic impact of technological disruption using mathematical model to predict the consequences of disruptive technologies. Therefore, the study is aimed at analyzing quantitative data to show how disruptive technologies can be managed for the purpose of achieving sustainable economic growth in the United States. Several literatures were reviewed, especially those related to disruptive technologies. The study findings revealed that Information Technology (IT) expenditure and individual using internet have positive and significant effect on economic growth of United States. It was also revealed that there is significant difference in IT expenditure before and after 2010, indicating a decrease in total amount spent on IT. The findings also revealed that there is significant difference in US Gross Domestic Products (GDP)

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before and after 2010. Also, it was found that there is significant difference in number of individuals using internet before and after 2010. Therefore, the study concludes technological disruption is a significant determinant of economic growth in the US. The study recommended that initiatives aimed at enhancing broadband infrastructure and fostering digital literacy can play a pivotal role in sustaining and amplifying the positive impact of technological advancements on economic growth. By understanding and leveraging these findings, policymakers, industry leaders, and stakeholders can make informed decisions, fostering a conducive environment for sustainable economic growth in the United States. This study serves as a timely and significant contribution to the field, providing actionable insights for shaping economic policies and strategies amid the evolving landscape of technological disruptions.

Keywords: Quantitative Model, Forecasting, Technology Disruption, Economic Growth

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26 Carrier-facilitated transport of Glycine leucine, and valine across the liquid membrane using anthraquinone-derived podands

Paper ID V9I6-1223 · Pages 202-207 · Membrane Technology

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Liquid membrane systems mimic membrane-mediated processes using designed carriers for the transport of substrate based on molecular recognition has potential applications in developing novel separation systems. We have designed and synthesized a new series of redox switched anthraquinone derived podands (receptor) 1-(1-anthraquinonloxy), 3,6,9 triaoxanonane–9–methane (A1) 1-(1- anthraquinonloxy), 3, oxapentane – 5 – methane (A2),1-(anthraquinonloxy), 3 methoxy methane (A3), 1,5 bis (2-(2-(2-(2- hydroxyethoxy) ethoxy) ethoxy) anthrancene 9-10 dione (A4), 1,5 bis (2-(2-(2-hydroxyethoxy)ehoxy)ethoxy)anthracene-9-10 dione (A5), 1,5 bis -(2-(2- hydroxyethoxy) ethoxy)ethoxy)anthracene-9-10 dione (A6) have been characterized by M.P., TLC, IR, H1NMR, Mass spectral analysis and cyclic voltammetry and used as a carrier in liquid-liquid extractionbulk liquid membrane, supported liquid membrane transport of amino acids. Quinone moiety present in these receptors not only acts as redox centers but also acts as a ligating site to interact with the substrate. The binding affinity of these synthesized receptors towards amino acid has been investigated and characterized in the solid state as a soft material and explored in solution state by liquid-liquid extraction, BLM, SLM system. Recognition of amino acid by synthesized receptor retained in both solid as well as solution state. The trend of transport of amino acid is lecucine>valine>glycine. Receptors A4,A5,A6 are bibracchial podands that proved to be good extractants and poor carriers than single-armed podands A1,A2,A3. Selectivity and specificity signify their scope in separation and use in the fabrication of biosensors and redox scitchable devices.

Keywords: Redox Switched Receptors, Amino Acids, BLM, SLM

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27 A comprehensive literature survey on non-contact laser-based measurement systems

Paper ID V9I6-1229 · Pages 208-220 · Measurement Systems

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Measurement is quantifying, evaluating, or accessing various physical quantities. Dimensional measurement is the most important factor determining a manufactured component's quality. There are 3 forms of measurement – manual, contact automated, and noncontact automated measurement. Manual measurement is when an operator performs a measurement using handheld instruments. Even if one person performs inaccurate measurements this leads to inaccuracy and hence the quality of the part is compromised. To overcome this human error, automated measurement systems were developed. In automated measurement, a part is placed within the system and the measurements are performed without human intervention. Hence improving the accuracy and reliability of the measurement process. Measurement systems have become the backbone of the manufacturing industry today. Various methods and technologies are used to develop these measurement systems. This comprehensive literature survey focuses on non-contact measurement systems. It also highlights the advances in these measurement systems, and how non-contact measurement systems have an upper hand over contact-based systems along with case studies on related research work presented for non-contact measurement in various fields.

Keywords: Contact-based Measurement Systems, Dimensional measurement, Precision, Accuracy, Non -Contact Measurement Systems, Laser Scanning

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28 Management of Yuvanpidika (acne-vulgaris) – A case study

Paper ID V9I6-1230 · Pages 221-226 · Ayurveda

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Acne-vulgaris is one of the most frequently seen chronic skin disorders. It is the most common dermatological disease of adolescents, affecting more than 89% of teenagers and frequently continuing into adulthood. It is an inflammatory condition of the pilosebaceous unit characterized by the formation of open and closed comedones, papules, pustules, nodules, and cysts. It can be correlated with Yuvanpidika. Eruptions on the face of an adolescent are called Yuvanpidika. The incidence of Yuvanpidika is increasing day by day due to the consumption of fried, spicy foods, grated foods, chocolates, etc, which leads to vitiations of doshas. This case is an ideal example of Yuvanpidika and is successfully treated with Ayurveda therapy. The patient was suffering from pustular acne, black-colored spots, pain, and itching along with a burning sensation present on their face for the last year. Considering the clinical features and vitiated doshas vata, kapha, and rakta are involved in pathology. The patient was treated with an external application of kustumbruadi lepa which is mentioned in Sushruta Samhita, Chikitsa Sthana. Treatment was continued for 45 days. At the end of treatment, there was a complete disappearance of acne, pain relief, burning sensation, itching, and also an improvement in

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discoloration of the face. The skin of the face is glowing. Hence it was concluded that Kustumbruadi lepa is highly effective in the management of Yuvanpidika.

Keywords: Yuvanpidika, Acne-vulgaris, Ayurveda, kustumbruadi lepa. Keywords – Yuvanpidika, Acne-vulgaris, Ayurveda, kustumbruadi lepa. Yuvanpidika, Acne-vulgaris, Ayurveda, kustumbruadi lepa.

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29 Deforestation control and forest monitoring system using Lora technology

Paper ID V9I6-1233 · Pages 227-231 · Embedded System

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Deforestation poses a critical threat to the natural world, leading to loss of biological diversity, habitat destruction, and also adverse effects in the climate. To fight against this challenge, our project presents a deforestation control and system monitoring that utilizes LoRa (Long Range) technology and a range of sensors, including fire, smoke, DHT11(humidity and temperature), sound, and tilt sensors, integrated with Arduino. This innovative system offers an effective solution for early detection, monitoring, and control of forest fires, thereby coming up with the mitigation of environmental damage and conservation of forests. The project operates on principles of real-time acquisition, transmission, and remote monitoring.

Keywords: Deforestation, LoRa Technology, MEMS, DHT11, Tilt, Fire, Smoke, Humidity, Soil Moisture Sensors.

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30 The categorical product of two odd cycle is a 2-connected graph

Paper ID V9I6-1237 · Pages 232-236 · Mathematics

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Recent advancements in graph theory often incorporate the concept of graph products. The concept of the categorical product of graphs was introduced by the mathematician Frank Harary in his paper titled "Topological Concepts for Maximum Graphs" published in 1969. The categorical product of graphs can be used to model and analyze complex network topologies. By considering the product of individual components, such as nodes or edges, one can study the interconnections and properties of the overall network structure. In light of this, our study aims to explore the properties of the categorical product of two graphs and demonstrate that the categorical products of two-cycle graphs with odd lengths are 2-connected.

Keywords: Graph Theory, Graph, Product of Graph, Categorical Product of Graphs.

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31 Impact of cultural factors and gender roles on maternal parenting in India

Paper ID V9I6-1238 · Pages 237-243 · Medical

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Purpose: To analyse the role of cultural factors and gender roles on maternal parenting in India Study design: Self report questionnaire Methodology: Sixty women in the age range of 35-73 reported their response through a self-report questionnaire Results: Majority of the women who participated in the survey strongly or moderately agreed that Indian culture does play a significant role in mothers labour participation. Majority also agreed that they are unemployed in-order to take care of family- an important gender role in India. Conclusion: results of the current study reveal that Indian culture and gender roles have played a significant role in the level of maternal employment

Keywords: Parenting, Maternal Employment

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32 A comparison of Machine Learning techniques for predicting IMDb score of movies

Paper ID V9I6-1241 · Pages 244-249 · Computer Science

Anubhav Mathur, Independent Researcher, Independent Researcher
Snigdha Patil, Independent Researcher, Independent Researcher

In the world of film industry analytics, predicting the success of movies based on various input features has garnered considerable attention in recent times. This research is important because it can help people in the movie industry make better decisions. It allows them to allocate resources effectively, minimize risks, and enhance the overall success of movie projects. This research paper presents and compares different machine learning techniques to predict the IMDb score of movies by leveraging multiple input features such as release date, genre, budget, gross revenue, profit, number of votes, country of origin, director, actor, writer, production studio, and runtime. We also account for the inflation rate over the years while considering the monetary attributes. We explore two methods: one where we transform and reduce the data using techniques like one-hot encoding and PCA, and another where we use label encoding for categorical data. In the first method, we try three models: Support Vector Regressor (SVR), RandomForest Regressor, and Recurrent Neural Network (RNN). In the second method, we use RandomForest Regressor, Gradient Boosting Regressor, and LightGBM Regressor. We measure how well these models predict by looking at Mean Squared Error (MSE) and R-squared. This research helps provide people in the film industry with insights into what factors contribute to a movie's success.

Keywords: Machine Learning, Principal Component Analysis, Light Gradient Boosting Machine (LGBM), Regression Analysis

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33 Phishing mail detection using bidirectional LSTM

Paper ID V9I6-1235 · Pages 250-254 · Computer Science

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Phishing attacks have become a major concern in today's digital world, where malicious actors try to dupe unsuspecting individuals into divulging sensitive information. The need for effective methods to detect phishing emails has become crucial. In this study, we propose a novel approach for phishing mail detection using Bidirectional Long Short-Term Memory (BiLSTM) networks. BiLSTM networks are a type of recurrent neural network (RNN) that can capture temporal dependencies in sequential data. Our approach leverages the power of BiLSTM networks to analyze the content and structure of emails for identifying phishing attempts. We preprocess the email data by converting them into sequential tokenized representations. These representations are then fed into the BiLSTM network to learn the patterns and features associated with phishing emails. We train our model using a large dataset of labeled phishing and non-phishing emails. Experimental results demonstrate that our proposed approach achieves high detection accuracy, outperforming traditional machine learning algorithms. The ability of BiLSTM networks to capture both past and future contextual information allows our model to effectively identify phishing emails based on their content and structural properties. With the increasing sophistication of phishing attacks, the development of robust and accurate detection systems is paramount. Our approach contributes to this goal by providing an efficient and reliable method for detecting phishing emails, thereby enhancing the security of individuals and businesses

Keywords: Phishing Mail Detection, Bidirectional LSTM, Recurrent Neural Network, Sequential Data, Detection Accuracy

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34 Blockchain Technology

Paper ID V9I6-1243 · Pages 255-257 · Computing Systems

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Blockchain is a method of recording information that makes it impossible or difficult for the system to be changed, hacked, or manipulated

Keywords: Blockchain , Decentralized System, Security

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35 Machine learning approach to detect malicious URL using XGBoost algorithm

Paper ID V9I6-1162 · Pages 258-262 · Malicious Url Detection

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There are over a billion websites today for the people to visit. People uses the websites to make their works easy but there is a high chance to fall the phishing domain over the internet that inject malware to the client's system or trick them to get their personal details. We will discuss about the machine learning method to classify these URLs in order to prevent people from visiting malicious URLs and improve the security of surfing over the internet. XGBoost algorithm and its performance has been discussed and how it uses the several features of URL to classify and detect the malicious URLs.

Keywords: URL, Malicious URL Detection, Machine Learning, Feature Extraction, XGBoost Algorithm

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36 KRISHI-SADHAN platform for farmers for renting equipment's

Paper ID V9I6-1163 · Pages 263-265 · Agriculture

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KRISHI-SADHAN is a MERN stack web application designed to revolutionize agriculture by addressing the intricate challenges faced by farmers. This transformative platform facilitates the seamless exchange and short-term rental of agricultural equipment, fostering a collaborative ecosystem among farmers. Leveraging React.js, Node.js, Express.js, and MongoDB, the system offers an intuitive and responsive interface, ensuring accessibility for users across diverse technological landscapes. The core objectives of Krishi-Sadhan encompass simplifying equipment exchange, enabling short-term rentals, fostering community collaboration, and empowering farmers through modern technology. The project's user-friendly interface goes beyond mere transactions, creating a dynamic marketplace where farmers can share knowledge, optimize resources, and contribute to sustainable agricultural practices. As Krishi-Sadhan embarks on its journey, the potential for positive change within the agricultural community is evident. By providing a comprehensive and secure platform, the project aims to empower farmers, promote efficient resource utilization, and contribute to the creation of a more connected and informed farming community. Krishi-Sadhan is not just a technological endeavour, it symbolizes a vision for a more sustainable and empowered future in agriculture, sowing the seeds of innovation for a resilient agricultural ecosystem

Keywords: MERN Stack, Equipment, Web Application

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Volume 12, Issue 6 (November-December, 2026) is open for submissions. Last date: 31st December, 2026.

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