



IMPROVED BLOCK-BASED EDGE DETECTION METHOD

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Abstract:

Edge detection is one of the processes in image processing. Canny edge detection is one of the numerous edge detection methods that are accessible, however even it has limitations including latency and a demanding computing process. Since frame-by-frame analysis is used in general for Canny edge detection, it is not very practical for real-time applications and eventually causes system lag. Additionally, because it is dependent on thresholds from the frame statistics, applying it directly to block level would result in information loss. Given that it is based on block technique in detection, where the threshold is determined adaptively based on gradient block of the picture, distributed Canny edge detection is emerging as a technology that is quicker and more suited for real-time settings. It is simple to integrate the resulting block-based method with existing block-based image codecs and it has a greatly reduced latency. Given that the processing time is now a function of the block size rather than the frame size, it is capable of allowing quick edge detection of high-resolution photos and movies. Additionally, objective tests and quantitative compliance evaluation demonstrate that the suggested edge detection algorithm performs better in terms of speed and throughput.

Keywords: Edge, Fuzzy logic, Block Processing, PSNR, MSE.

Introduction:

One of the topics of fundamental importance in picture handling is edge detection. The "edges" of the images are the areas that cause sudden changes in dark tones. These qualities can be recognized from edges by taking advantage of the direct relationship between physical properties of materials and their edges. Edge location systems recognize the value of image handling [1].

Effects of Noise on Edge Detection:

Commotion renders edge detection [2] defenceless. This is due to how edge detector computations are designed to respond to abrupt changes, which loud pixels can generate. In advanced films, clamour can occur for a variety of causes. Background noise, "and pepper" commotion, and dot commotion are the clamours that are most frequently regarded.

Preprocessing is done on the image to lessen the effects of disturbance. Preprocessing can be done in one of two ways: either by using a smoothing capacity to separate the image, or by using a



A Study of the Fundamentals of Computer Networking

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Abstract:

For the exchange of digital information, computer network systems are connected to one another. A group of machines connected by inks makes up a computer network. Distributed processing is a technique used by computer networks, where tasks are split across numerous computers. Attacks on a network's resources are one of its most important problems. The idea of computer networks is highlighted in this research article. A computer network is made up of several devices that are linked together. Nodes can be hosts in personal computers, mobile phones, servers, and networking equipment. Computer networks enable the use of email and instant messaging programmes, as well as the access to the World Wide Web, shared usage of application and storage servers, printers, and fax machines. Information sharing is utilised by computer networks to carry out a variety of functions. There are two types of system open system and closed system. Open systems are simple to set up for communication and connect to networks. On the other hand closed system is not easily connected with other network as proper authentication is needed.

Keywords:

Computer networks, Connection, Types of networks, Topology, Data transfer



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ANALYZING COMPOUND SENTENCES BASED ON THEIR FEATURES

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Abstract:

Sentiment analysis is a field of research that examines how people feel about various objects, including goods, services, organisations, people, and events. A bull market in individual opinions, reviews, ratings, recommendations, and other online expressions has been spurred by the growth of blogs and social networks. By analysing this vast amount of data in light of the end user's positive, negative, and neutral viewpoints, sentiment analysis is performed. The focus of feature-based sentiment analysis is on several characteristics or attributes of the thing being analysed. On the internet, you can find reviews, attitudes, ideas, and feelings expressed in both simple and complicated sentences. In contrast to the analysis of compound sentences that comprise several clauses, feature-based sentiment analysis of simple sentences is simple. In this article, we suggest guidelines for evaluating various conjunctions and a method for feature-based sentiment analysis of compound phrases.

Keywords: Sentiment analysis, Conjunction, NLP, Machine learning, Feature Extraction

Introduction:

Language is the primary means of communication that individuals use. The majority of our ideas and emotions are expressed through it [10]. Sentiment analysis [1]—also referred to as opinion mining— involves the use of computational linguistics, text analysis, and natural language processing to locate and extract subjective information from source sources. Reviews and social media are frequently subjected to sentiment analysis for a range of purposes, from marketing to customer support. In corporate and big organisations, SA aids data analysts in gathering public opinion, tracking brand and product response, doing market research, and obtaining customer experiences [8].

In general, sentiment analysis seeks to ascertain a speaker's or writer's perspective on a subject or the overall contextual polarity of a document. The attitude can be the author's judgement or assessment, affective state (i.e., the author's emotional state at the time of writing), or the intended emotional communication (i.e., the emotional impact the author hopes to have on the reader).

A Review on BlockChain Technology

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Abstract:

Bitcoin's underlying technology, blockchain, has recently drawn a lot of attention. Blockchain acts as an unchangeable ledger that enables decentralized transactions. Numerous industries, including financial services, reputation management, and the Internet of Things (IoT), are seeing the emergence of blockchain-based applications. However, blockchain technology still faces a number of difficulties, including scalability and security issues. This paper provides a thorough introduction to blockchain technology. First, we give a brief introduction to blockchain architecture before contrasting some common consensus techniques applied across various blockchains. Also briefly addressed are technical difficulties and recent advancements. We also outline potential blockchain trends in the future. Many people view blockchain as a disruptive fundamental technology. Blockchain research is still in its infancy, despite the fact that many scholars have realized the significance of blockchain. As a result, this study examines the most recent scholarly studies on blockchain, particularly in the fields of business and economics.

Keywords:

Blockchain, Scalability, Security, Decentralization, Bitcoin, Mining

Introduction:

Future networks will face significant challenges in order to deliver intelligent services to users in an effective and secure manner because of the massive amounts of data generated, transmitted, and processed in the networks due to the exponential growth in network users and their myriad network-connected devices. The 2019 Cisco report claims.[1] Traditional transactions are all dependent on a single trusted person, which creates a number of issues with transaction cost, efficiency, and security. We need to present the idea of blockchain technology in order to address these issues and achieve secure, quicker, and transparent transactions.

Satoshi Nakamoto introduced the blockchain technology [2]. To generate more money in the future, miners conceal their extracted blocks. In that case, branches might happen frequently, which would slow down the development of the blockchain. Therefore, some remedies must be proposed in order to resolve this issue. Additionally, it has been demonstrated that privacy leaking can occur in blockchain even when users only utilize their public key and private key for transactions [3].



A Review of the Internet of Things: Concepts, Applications, and Challenges

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Abstract:

The Internet of Things (IoT) has emerged as a transformative technology paradigm, connecting billions of devices and enabling seamless communication and data exchange. It explores the concept of interconnected devices and sensors, as well as the underlying technologies such as wireless communication, cloud computing, and data analytics that enable IoT functionality. Additionally, the paper examines the various IoT communication protocols and standards that facilitate interoperability among diverse devices. It also explores the use of IoT in smart cities, healthcare, agriculture, transportation, manufacturing, and home automation. By leveraging the vast amounts of data generated by IoT devices, these applications offer improved efficiency, enhanced decision-making and increased automation. The Internet of Things (IoT) has revolutionized the way we interact with our surroundings, connecting everyday objects and devices to the internet. However, this unprecedented level of interconnectivity introduces significant security challenges. Securing the IoT ecosystem is critical to ensure the privacy, integrity, and availability of data and to protect against potential cyber threats.

Keywords:

Internet of Things (IoT), Wireless communication, Cloud computing, Block chain technology, Artificial intelligence, 5G connectivity

Introduction:

Analyzing Sentiment based on Product Reviews: A Systematic Review

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Abstract:

Sentiment analysis is the practise of using natural language processing (NLP) to anticipate the emotion of a statement by mining data, views, reviews, or individual sentences. Text is divided into three categories for sentiment analysis: "Positive," "Negative," and "Neutral." It analyses the data and assigns positive and negative labels to the "better" and "worse" sentiments. As a result, the World Wide Web (WWW) has developed into a vast source of user- or custom-generated raw data in recent years. Users can conveniently express their opinions and sentiments by using social media, e-commerce websites, and movie review sites like Facebook, Twitter, Amazon, and Flipkart. In the WWW, where millions of individuals share their opinions in their everyday interactions, whether on social media or in e-mails, which may be their feelings and thoughts about a specific subject. For any kind of decision-making process, whether positive or negative, these expanding raw data provide an extraordinarily high supply of knowledge. The field of sentiment analysis has emerged to automatically analyze such massive amounts of data. Sentiment analysis's primary goal is to classify online data by determining its polarity. Although sentiment analysis is a text-based process, it might be difficult to determine a sentence's precise polarity. This asserts that a superior solution must be found in order to outperform any prior method or strategy utilized to determine sentence polarity. Therefore, there is a need for automated data analysis approaches to determine the polarity or emotion of a user or client. In this work, a thorough examination of several sentiment analysis methods and approaches is presented, along with a novel method that is suggested.

Keywords:

Sentiment analysis, Opinion mining, NLP, Machine learning

Introduction:

In today's environment, companies have overloaded data as a customer feedback, but for human it is impossible to analyses the data manually without any sort of bias or error. This feedback is the key point for improvement in quality and policies of any company. Sentiment analysis (SA) is the only method to automate for identifying the positive, negative or neutral aspects of such large data [12].

Sentiment Analysis (SA)

Language is the essential methods for correspondence utilized by people. It is the instrument we use to communicate most of our thoughts and feelings. The sentiment analysis is a phrase coined to detect the polarity of the given word or sentence [11]. Polarity is primarily classified into three

PREDICTIVE MAINTENANCE IN INDUSTRIAL MACHINERY USING MACHINE LEARNING

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Abstract:

The advent of Industry 4.0 has ushered in a new era of intelligent manufacturing, with a focus on optimizing operational efficiency, reducing downtime, and ensuring cost-effectiveness. Predictive maintenance has emerged as a critical component of this paradigm shift, leveraging machine learning techniques to proactively anticipate and prevent machinery failures. The primary objective of this research is to investigate the feasibility and efficacy of various machine learning approaches in predicting and preventing equipment failures in industrial settings. The study involves the collection and analysis of sensor data, encompassing diverse parameters such as temperature, vibration, pressure, and energy consumption, from a range of industrial machinery. Feature engineering techniques are employed to extract relevant patterns and trends, enabling the creation of predictive models. A comparative analysis of prominent machine learning algorithms, including but not limited to Random Forest, Support Vector Machines, Neural Networks, and Long Short-Term Memory networks, is conducted to evaluate their predictive performance. The research delves into the challenges of data preprocessing, model training, hyperparameter optimization, and model interpretability, providing insights into overcoming these obstacles for effective implementation. Furthermore, the study explores the role of data fusion and integration from multiple sources to enhance the accuracy and robustness of predictive maintenance models. The incorporation of historical maintenance records and contextual information enriches the models' predictive capabilities, enabling more precise identification of potential failure scenarios and optimal scheduling of maintenance activities.

Keywords: Predictive Maintenance, Industrial Machinery, Machine Learning, Industry 4.0, Sensor Data, Algorithm Comparison, Data Fusion, Operational Efficiency, Downtime Reduction

Introduction:

In today's era of rapid technological advancement and industrial transformation, the concept of predictive maintenance has emerged as a pivotal strategy to ensure the optimal performance, longevity, and cost-effectiveness of industrial machinery. The integration of machine learning techniques into the domain of industrial equipment upkeep has revolutionized the way organizations approach maintenance practices. By harnessing the power of data-driven insights and advanced analytics, predictive maintenance offers the potential to proactively identify, anticipate, and prevent machinery failures before they occur [1]. The advent of Industry 4.0, characterized by the convergence of digital technologies, automation, and real-time data exchange, has underscored the significance of predictive maintenance as a critical enabler of smart manufacturing. Traditional maintenance approaches, such as reactive and scheduled maintenance, often result in production downtimes, costly repairs, and inefficient resource utilization. Predictive maintenance, in contrast, empowers industrial enterprises to transition from reactive crisis management to a proactive and strategic approach, thereby enhancing operational efficiency and minimizing disruptions. This research embarks on a comprehensive exploration of the

A STUDY ON INDIAN RAILWAY TRACK

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Abstract:

Indian Railways is the fourth largest Railway network in the world after US, Russia and China. Three Mountain Railways of India i.e. Darjeeling Himalayan Railway a narrow gauge railways in West Bengal, Nilgiri Mountain Railway, a meter gauge railway in the Nilgiri Hills in Tamil Nadu and Kalka-Shimla Railway, a narrow gauge railway in the Shivalik mountains in Himachal Pradesh are already declared UNESCO world heritage sites in 1999. Indian Railways has become the fourth railway in the world which loads more than a billion tons of freight in a year. IR uses a range of signaling technologies and methods to manage its train operations based on traffic density and safety requirements. We have covered all the details regarding the history of Indian Railway such as the benefits of transporting goods and passengers through the Indian Railway and other interesting facts.

Keywords: History, track, Indian railways, good track, Challenges

1. Introduction:

The track or permanent way is the railroad on which trains run. It consists of two parallel rails fastened to sleepers with a specified distance between them. The sleepers are embedded in a layer of ballast of specified thickness spread over level ground known as formation. The ballast provides a uniform level surface and drainage, and transfers the load to a larger area of the formation. The rails are joined in series by fish plates and bolts and these are fastened to the sleepers with various types of fittings. The sleepers are spaced at a specified distance and are held in position by the ballast. Each component of the track has a specific function to perform. The rails act as girders to transmit the wheel load of trains to the sleepers. The sleepers hold the rails in their proper positions, provide a correct gauge with the help of fittings and fastenings, and transfer the load to the ballast. The formation takes the total load of the track as well as of the trains moving on it.

2. History of Indian Railway:

1853-1869: Launching passenger rail services:

Although rail services in India were initially proposed in the 1830s, historians cite 16 April 1853 as the kick starter for India's passenger rail revolution. On this date, the country's first passenger train set off on a 34km journey between Bombay's Bori Bunder station and Thane. It consisted of 14 cars being hauled by three steam locomotives, and carried 400 passengers. This early era of passenger travel was primarily funded by private companies under a guarantee system created by the British Parliament, which ensured they would receive a certain rate of interest on their capital investment. In total, eight railway companies were established between 1855 and 1860, including Eastern India Railway, Great India Peninsula Company, Madras Railway, Bombay Baroda and Central India Railway.

1901-1925: Moves towards centralization:

Review of Additive Manufacturing (3d Printing) Techniques and Applications

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Abstract:

Additive manufacturing, commonly known as 3D printing, has emerged as a transformative technology in the field of mechanical engineering. The fundamental principles of additive manufacturing, including the layer-by-layer deposition of materials and the different types of additive manufacturing processes such as fused deposition modeling (FDM), stereolithography (SLA), selective laser sintering (SLS), and binder jetting. Each technique is examined in terms of its working principles, materials compatibility, resolution, speed, and suitability for different applications. The significant advancements and innovations in 3D printing materials, ranging from polymers and metals to ceramics and composites. It delves into the properties and characteristics of these materials, their processability, and their potential applications in industries such as aerospace, automotive, healthcare, consumer products, and architecture. The impact of additive manufacturing on design freedom, customization, and rapid prototyping. It discusses the integration of computer-aided design (CAD) software with 3D printing technologies, enabling complex geometries, lattice structures, and functional prototypes to be realized. The benefits of reduced material waste, shortened lead times, and cost-effectiveness are also addressed.

Keywords:

Additive manufacturing, 3D printing, Fused deposition modeling (FDM), Stereolithography (SLA), Selective laser sintering (SLS), Binder jetting, Materials, Polymers, Metals, Ceramics, Composites, Aerospace

Introduction:

Additive manufacturing, commonly known as 3D printing, has revolutionized the field of mechanical engineering, offering innovative solutions to traditional manufacturing processes. In recent years, additive manufacturing has emerged as a disruptive technology that enables the fabrication of three-dimensional objects by sequentially depositing materials layer by layer. Unlike conventional subtractive manufacturing techniques, which involve removing material from a larger block, additive manufacturing builds objects from the ground up, offering unprecedented design freedom and manufacturing capabilities [1]. The versatility of additive manufacturing lies in its diverse range of techniques, each suited for specific applications and materials. Techniques such as fused deposition modeling (FDM), stereolithography (SLA), selective laser sintering (SLS), and binder jetting have gained prominence in various industries due to their unique characteristics and advantages. Understanding the working principles, advantages, and limitations of these techniques is crucial for harnessing the full potential of additive manufacturing. Moreover, the choice of materials plays a crucial role in additive manufacturing. Polymers, metals, ceramics, and composites are among the materials commonly used in 3D printing, each offering distinct properties and processability [2]. Exploring the compatibility of these materials with different additive manufacturing techniques and their applications across industries such as aerospace, automotive, healthcare, consumer products, and architecture provides insights into the breadth of possibilities offered by additive

APPLICATION OF ARTIFICIAL INTELLIGENCE IN PRODUCT DESIGN AND OPTIMIZATION

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Abstract:

The advent of artificial intelligence (AI) has revolutionized various industries, and the field of product design and optimization is no exception. This research explores the significant impact of AI technologies in enhancing product development processes and achieving optimal design outcomes. The study delves into the integration of AI-driven techniques, including machine learning, deep learning, and evolutionary algorithms, into the product design lifecycle. The paper investigates how AI algorithms are employed to analyze massive datasets, identify patterns, and extract valuable insights to inform the design process. It highlights the ability of AI to enhance creativity and innovation by suggesting novel ideas, exploring diverse design possibilities, and efficiently generating concept proposals. Furthermore, the research examines how AI-driven simulations and virtual prototyping enable engineers to predict product behavior accurately, reducing the need for physical prototypes and saving substantial time and resources. The optimization aspect of AI in product design is a focal point of this study. By employing advanced optimization algorithms, AI assists in refining product designs, making them more efficient, reliable, and cost-effective. The paper showcases real-world case studies where AI has played a pivotal role in optimizing complex engineering structures, reducing material waste, and improving product performance. In addition, the research investigates the human-AI collaboration in product design, emphasizing the synergy between AI's analytical capabilities and human intuition and domain expertise. Ethical considerations regarding the use of AI in design, such as bias mitigation and transparency, are also explored to ensure responsible and inclusive product development practices.

Keywords: Artificial Intelligence (AI), Product Design, Optimization, Machine Learning, Deep Learning, Evolutionary Algorithms, Data Analysis

Introduction:

In recent years, the rapid advancements in artificial intelligence (AI) have reshaped industries across the globe, introducing innovative solutions to age-old challenges. Among the beneficiaries of this technological transformation is the domain of product design and optimization. AI has emerged as a powerful tool, revolutionizing the way products are conceived, developed, and improved. This research explores the diverse applications of AI in product design and its role in optimizing design outcomes. The integration of AI technologies, including machine learning, deep learning, and evolutionary algorithms, has paved the way for a new era of product development. With access to vast datasets, AI algorithms excel at processing and analyzing information, enabling engineers and designers to gain deeper insights into consumer preferences, market trends, and existing product performance [1]. By leveraging this data-driven approach, product designers can make informed decisions that cater to the specific needs and desires of their target audience. One of the key contributions of AI lies in enhancing

INTEGRATED RENEWABLE ENERGY SOURCES AND VARIOUS TECHNOLOGIES: A CRITICAL REVIEW

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Abstract:

In order to attain the goal of decarbonization in the energy sector, technologies like wind power, solar power, and water power can be used as the primary sources of renewable energy. They do differ significantly from traditional power plants in some important ways, though. The proportion of renewable energy has changed and presented a number of difficulties, particularly in the power generation system. The decarbonization target can be reached with the reliability of the power system, but this goal frequently runs into a number of obstacles and breakdowns that put the target's achievement in danger. The difficulties and technological solutions are, however, still hardly ever covered in the literature. This study specifically examined a number of technological issues and potential solutions, particularly in the field of power systems. The most crucial components that must be produced in the future are the outcomes of the examination of the solution matrix and the connected technological problems. The development of a matrix containing different renewable technology solutions can assist in resolving difficulties. In particular, cost-effective energy is projected to benefit from and be prioritised by the potential of the created technical solutions. In addition, collectively developed technological solutions can aid in easing some difficulties. The categories created in this study are used to help identify particular requirements and improve the transparency of the integration of renewable energy in the future.

Keywords: Renewable Energy Resources, Solar Energy, Wind Energy, Hydropower

Introduction:

As world's population [1] is increasing day by day, therefore the utilization of energy is increasing in a hurry. The employ of renewable energy resources seems to be a huge movement by which the extra energy can be generated as generation of energy becomes an important concern for the world. Renewable energy resources can be a alternative option for conventional energy resources as it substitute conventional fuels in four basic different areas such as electricity generation, hot water/space heating, motor fuels and off grid energy examines etc. Basically, the most important aspect for increasing renewable energies is to pilot a number of positive results like controlling the greenhouse effect and climate change. There are various renewable energy resources are available in nature mainly like solar, wind, geo- thermal, tidal, biomass etc.

So, in this paper, a brief literature review is carried away to get an idea that how these renewable energy resources had been used so far and to have an idea about the evolution of these energy resources.

1. Renewable Energy Sources And Technology:

Renewable energy sources [2] are energy sources from natural and persistent flow of energy happening in our immediate environment. They include: bioenergy, direct solar energy, geothermal energy, hydropower, wind and ocean energy (tide and wave).

2.1. Hydropower

Hydropower is an essential energy source harnessed from water moving from higher to lower elevation



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AN ANALYSIS OF INDIAN CORRUPTION

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Abstract:

Today, corruption is a major problem in India that has attracted significant public attention as well as a lot of scholarly study. However, there is a considerable disconnect between what has garnered media attention, the policy alternatives being debated, and the actual empirical data on corruption. By directly addressing the unique difficulties that corruption in India presents, we make an effort to close this gap. The broad and pervasive sense of corruption that is supported by academic research. However, we discover that the costs of routine corruption are at least as high as those of the "scams" that frequently make headlines. Furthermore, we discover that there is scant evidence to back up the claim that increased openness, knowledge, and community-based initiatives can significantly reduce corruption on their own. This is also true for some technology solutions, but those interventions, like direct benefit transfers, that avoid intermediaries and dishonest officials, as well as those that give citizens and beneficiaries more negotiating power, have a considerably larger chance of success. The logical and comprehensive legislative strategy to fight corruption, which includes the Right to Service and Public Procurement laws, deserves praise. The implementation of the law, not its existence on paper, is what matters most for preventing corruption; as always, the binding constraint is the government's willingness and capacity to punish dishonest officials and lawmakers.

Keywords: Corruption, Scam, Government.

Introduction:

These days, corruption, an extremely old issue, is everywhere. Corruption is similar to a disease in public life that has developed over time rather than abruptly. A community or a country can be destroyed, ruined, or otherwise spoiled. Immorality and a lack of respect or fear of the law are traits of a corrupt society. It is the abuse of government authority for personal gain. Bribery, extortion, fraud, embezzlement, theft of public resources, nepotism (favouring family members for jobs and contracts), cronyism, and influence-peddling are just a few of the various ways that corruption can

ECONOMIC GROWTH AND INTERNATIONAL TRADE: A BRIEF ANALYSIS

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Abstract:

International trade has an important impact on the country's economic growth. International trade accounts for a significant portion of GDP in several countries. Various companies from various countries are looking for new prospects for expansion outside of their native national borders. Important areas of the economy, such as transport and ICT, can benefit from foreign commerce. Thus, international trade can be beneficial to businesses in terms of profit growth potential, less reliance on established markets, business expansion, and so on. Globalization has resulted in a growth in international trade over the years. As a result, both consumers and businesses can now select from a broader selection of products and services. Globalization also refers to the interconnectedness of countries that result from the integration of many elements of the economy, such as trade. International commerce has the potential to generate economic growth in countries that are increasingly integrated. Businesses cannot ignore globalization because of the potential provided by overseas markets.

Keywords: International trade, Export, Import, Foreign trade balance, Globalization

Introduction:

International trade is important for a country's economic growth, and in today's financial system, both global trade and economic growth are popular notions. The phrase international trade refers to the buying and selling of products and services between countries in order to meet the requirements of their respective populations. International trade allows countries to sell goods and services produced in their own countries to other ones. Economic growth contributes to the extension of the country's actual per capita income, which can be sustained over time. Regional and international specialization plays equally important roles. Regional specialization occurs when a number of places or areas within a country specialize in the manufacture of various items. International specialization means that several countries throughout the world specialize in producing various items. The factors that determine regional specialization are similar to those that determine global specialization. A country that produces more of a good than it needs tends to export it to other countries in return for those countries' surplus goods.

International trade is the exchange of goods across national borders. The expanding amount of international commerce and the reduction of trade barriers have sparked debate and analysis about the influence of international trade on countries' economic growth. Historical evidence has revealed that countries with a strong worldwide presence are more productive than ones that simply produce for the home market. The relationship between international commerce and a country's economic growth can be either good or negative; the nature of the relationship is determined by the economic frameworks in place to govern trade. In today's world, almost no country can thrive on its own without engaging in economic partnerships with other countries. Classical and neoclassical economists have emphasized international trade as a driver of economic progress. The declared goals of India's economic reform strategy in the external sector after 1991 were to generate a significant shift in the momentum of export growth and to attract extremely large inflows of foreign capital in the form of export-oriented FDI. On

PRE-PROCESSING OF HUMAN EYE

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Abstract:

In the pre-processing of human eye, noise removal is an important problem which includes like eyelashes, eyelids, reflection and pupil. So it is important to detect the eyelid and remove to increase the accuracy. The probability of finding two people with identical iris pattern is almost zero that's why iris recognition technology is becoming an important biometric solution for people identification in access control as networked access to computer application. It is used for confidential financial transactions and personal data privacy and applicable in federal, state and local governments, in the military, etc. Compared to fingerprint, iris is protected from the external environment behind the cornea and the eyelid. The objective of this work is to provide a system that uses techniques of digital image processing to detect eyelid and remove it.

Keywords: Eyelid Detection, Image Processing, MATLAB.

Introduction:

Identification of humans is a goal as ancient as humanity itself. As technology and services have developed in the modern world, human activities and transactions have proliferated in which rapid and reliable personal identification is required. Examples include passport control, computer login control, bank automatic teller machines and other transactions authorization, premises access control, and security system generally. All such identification efforts share the common goals of speed, reliability and automation [3] [4].

The use of biometric indicia for identification purposes requires that a particular biometric factor be unique for each individual that it can be readily measured, and that it is invariant over time. Biometrics such as signatures, photographs, fingerprints, voiceprints and retinal blood vessel patterns all have significant drawbacks. Although signatures and photographs are cheap and easy to obtain and store, they are impossible to identify automatically with assurance, and are easily forged. Electronically recorded voiceprints are susceptible to changes in a person's Voice and they can be counterfeited. Fingerprints or handprints require physical contact, and they also can be counterfeited and marred by artifacts [1].

Human iris on the other hand as an internal organ of the eye and as well protected from the external environment, yet it is easily visible from within one meter of distance makes it a perfect biometric for an identification system with the ease of speed, reliability and automation. In this paper, we are going to experiment, implement, and most importantly, look into the theory behind an Iris Recognition System, which is not only related to the field of personal identification, and more specifically to the field of automated identification of humans by biometric indicia.

ATMOSPHERIC POLLUTION

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Abstract:

The problems of industrialization, modernization, and population growth in emerging nations deteriorate society by causing air pollution. Furthermore, as dangerous gases from automobile exhaust and industrial sources are added, the concentration of pollutants rises day by day. Through visual impressions, air pollution directly affects how individuals think about and experience their life. This significantly diminishes people's subjective well-being. People gradually came to understand the harmful consequences that outdoor air pollution has on their health. Public health risks like cardiovascular disease, respiratory illnesses, chronic obstructive pulmonary disease (COPD), and asthma that are prevalent worldwide are aggravated by outdoor air pollution. The broad overview of policies in outdoor air pollution, pollutants, and exposures and its health effects are presented. All things considered, the objective of the current review is to compile findings from various studies and give a snapshot of our current understanding of the relationship between outdoor air pollution and health. It also aims to educate people about the effects of outdoor air pollution on their health and offer a strategy for counseling those who are most vulnerable to it in order to reduce exposure.

Keywords: Air Pollution, Health, Management, Regulations, Subjective Well-being

Introduction:

One of our era's greatest scourges is air pollution, on account not only of its impact on climate change but also its impact on public and individual health due to increasing morbidity and mortality. There are many pollutants that are major factors in disease in humans. Among them, Particulate Matter (PM), particles of variable but very small diameter, penetrate the respiratory system via inhalation, causing respiratory and cardiovascular diseases, reproductive and central nervous system dysfunctions, and cancer. Even though ozone in the stratosphere plays a protective role against ultraviolet irradiation, it is harmful when in high concentration at ground level, also affecting the respiratory and cardiovascular system. Furthermore, nitrogen oxide, sulfur dioxide, Volatile Organic Compounds (VOCs), dioxins, and polycyclic aromatic hydrocarbons (PAHs) are all considered air pollutants that are harmful to humans. Carbon monoxide can even provoke direct poisoning when breathed in at high levels. Heavy metals such as lead, when absorbed into the human body, can lead to direct poisoning or chronic intoxication, depending on exposure. Diseases occurring from the substances include principally respiratory problems such as Chronic Obstructive Pulmonary Disease (COPD), asthma, bronchiolitis, and lung cancer, cardiovascular events, central nervous system dysfunctions, and cutaneous diseases [1]. The prime most reason behind air pollution is due to the combustion of fossil fuels, used for the generation of energy and transportation.

Most of the developing countries use more fossil fuel results in increased industrial emission by which the rate of air pollution in the countries also increased. The increasing number of populations is another major reason for the pollution and cities are crowded. Last but not the least, climate change resulting from environmental pollution affects the geographical distribution of many infectious diseases, as do natural disasters. The only way to tackle this problem is through public awareness coupled with a



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TECHNOLOGY EMPHASIS IN RETAIL STORES

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Abstract:

This paper discusses the different technologies that are implemented in retail stores, and how retail players are applying these technologies to reduce the operational and technological gap in order to compete in this globally competing environment. The increasing globalization of retailing, constant connectivity, contextual relevance, and a multi-screen world are changing both online and offline shopping. As the in-store experiences blur, it is opening up exciting new possibilities for forward-thinking retailers. Today's retail business is highly dependent on information and if barriers are not met, a thriving business will soon be doomed. Today, the information technology (IT) investment in the retail sector has increased significantly. IT plays an important role in the management of complex retail operations. Market knowledge, as well as control of data and information is essential to obtain a competitive advantage in the retail sector. Today's consumers are well updated than ever and they shop to greatly increased expectations for service and price. Retailers are beginning to notice that technology's role is one of an enabler. Essentially, information technology can speed up processes and increase sales, improve customer retention rates and deliver cost saving benefits to the company.

Keywords: Retail stores, Technology, customer satisfaction, benefits

Introduction:

Technology has disrupted almost every industry worldwide, and the retail sector is no different. E-commerce is often what retailers think of first when discussing the impact of technology on shopping and retail. However, technologies such as AI, computer vision and IT have changed every part of the shopping experience from browsing to checkout. These changes have been driven, at least in part, by the rise of e-commerce and the demands of an increasingly discerning consumer base. [5] The retail industry business has been around for centuries. It all started with a community general shop where people of the community would shop for items of necessity. As societies advanced with population increase leading to expanded cities, and new advanced technologies gave rise to interconnectivity as well easy communication between distanced cities or societies, opportunity for specialty stores was



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FACE DETECTION AND RECOGNITION USING DIGITAL IMAGE PROCESSING

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Abstract:

One of the top computer vision technologies at the moment is facial recognition. In computer vision, recognizing faces is always an extremely challenging process due to lighting, stance, and facial expression. Target objects are tracked using face recognition in real-time video images captured with a video camera. It is, in essence, a system programme that can recognize a person from a still photo or video frame. We suggested an automatic face recognition method in this paper. When the person in front of the camera recognizes him, this programme, which is based on face detection, feature extraction, and identification algorithms, automatically detects the human face.

Keywords: Face Recognition, Digital Image Processing, Detection

Introduction:

Face Detection is a computer vision task that involves automatically identifying and locating human faces within digital images or videos. It is a fundamental technology that underpins many applications such as face recognition, face tracking, and facial analysis [2].

Human Face always play crucial role in application such as security system, credit and debit card verification surveillance on identify criminal public places. The main objectives of the system are to create a facial recognition system that can be emulated and eventually overcome this capacity of human. This system focuses especially on the human frontal faces. Multiple face recognition algorithms have been developed and each has its own strength. Most of the time we look at a face and are able to recognize it instant if we are already familiar with the face. This natural ability, if possible, can be justified and can be used for real life applications. That time there are many face detection algorithms. The first one is a local face recognition system, which uses facial features of a face to intimate the face with a person. The second approach or global face recognition system use the entire face to recognize a person. The above two process have been implemented one to another way by another algorithms. Unconcern of those changes can easily identify a person. So, the idea of emulate this skill is that human beings can be very rewarding [3].



CONGESTION CONTROL AND CONTENTION ELIMINATION IN OPTICAL SWITCHING NETWORKS

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Abstract:

One of the major challenges in optical packet switching (OPS) networks is congestion. To tackle this issue, we suggested the network global control technique. A slotted OPS network with no contention can be realized by adding cycled traffic at the edge node and the slot assignment algorithm at the core node. This network may be a strong contender for future optical networks since it can achieve good throughput, end-to-end latency, and delay jitter performance at high load simultaneously.

Keywords: OPS, OBS, Congestion Control, Blocking Probability.

Introduction:

Any type of optical technology is utilized in an optical network to transmit signals over long distances. First-generation (1G) optical networks are collections of optical fibres that connect electronic switches both in the past and in the present. With no signal conversion to the electrical form, some routing and switching is carried out in the optical domain in second-generation (2G) optical networks.

Experts refer to these networks as "all-optical networks" because of the enormous success of optics in communications systems. This causes electrical signals to be distinguished. It is necessary to attain transmission speeds more than Tb/s in a single-wavelength multiplexed optical fibre when using high bandwidth optical fibres. A single wavelength can currently accept signals with a 40 GB/s data rate. Additionally, optical fibres have very little transmission loss per unit length [1]. Although the electrical signal does not have the same high bandwidth as an optical signal, it does enable the transmission of signals with a higher level of granularity, allowing us to accept many signals with varying bit rates as opposed to a few number of high bandwidth optical pipes. It is simple to multiplex these slow electrical signals and send them all at once across a fast optical link.

The reality of optics and electronics coexisting is created by the triumph of optical networking technologies. Three functional planes can be used to separate the cohabitation:

- User information is sent between locations via the transport plane/data plane, which also facilitates the transfer of some control and network management data, such as IP, ATM, SDH/SONET, and OTN.



OSPF CONVERGENCE DELAY IMPROVEMENT BY BACKUP PATH TECHNIQUE

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Abstract:

The link state routing protocol Open Shortest Path First (OSPF) is a well-liked inner gateway protocol (IGP) on the Internet. As the nature and requirements of routing infrastructures have changed, widespread deployment and years of experience running the protocol have driven constant improvements in its operation. Modern routing domains need to keep their service availability at a very high level. OSPF must therefore quickly converge to topology changes. In order to prevent routing instability, OSPF must operate at a high level of scalability due to the constantly expanding number of routing domains and the potential presence of wireless mobile adhoc network (MANET) components. Significant work has been done in recent years to increase OSPF's scalability and convergence speed as well as to extend OSPF to enable smooth integration of mobile adhoc networks with traditional wired networks. Our primary goal in this research study is to use the shortest path algorithm to generate the backup path. So that it may swiftly adopt another specified path that is recorded in the backup table when any node fails.

Keywords: OSPF, Convergence Delay, Dijkstra's Algorithm

Introduction:

Routing Protocol

The exchange of information that enables routers to choose routes between any two nodes in a computer network is outlined by a routing protocol [1]. Algorithms for routing choose a specified path. Only the networks that are directly connected to each router are known to it beforehand. This information is distributed throughout the network through a routing system, initially among close neighbours. Three categories of routing protocols exist:

- By using link state routing protocols, internal gateway routing
- protocols for internal gateway routing using distance vectors



Cyber Security: Its Role and Techniques

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Abstract:

It is essential to understand cyber security and be able to apply it successfully in the modern world, which is run by technology and network connections. If there is no security to secure it, systems, vital files, data, and other important virtual items are at risk. Every business, whether an IT firm or not, needs to be protected equally. The attackers do not fall behind as a result of the advancement of new cyber security systems. They are using more advanced and improved hacking tactics to target the weak points of several firms worldwide. Because of the tremendous amounts of data that the military, government, financial, medical, and corporate sectors collect, use, and store on PCs and other devices, cyber security is crucial. Sensitive information, including financial data, intellectual property, personal information, and other types of data for which unauthorized access or acquaintance could have undesirable effects, can make up a sizeable portion of such data.

Keywords:

Cyber security, Information, Viruses, Techniques

Introduction:

Computer systems and other electronic devices must be protected from deliberate cyberattacks, opportunistic malware (such as viruses, trojan horses, and bugs), and unintentional user introduction of malware. This is known as cyber-security. Cyberthreats are spreading swiftly on a worldwide basis. In the current era, having access to large amounts of data has become more popular, thus every year, various attempts are made to compromise data, sensitive, confidential, or classified documents in order to reveal information for political or financial advantage. As a result, it is now crucial to implement effective cyber-security practices. Cyber-threats come in three different types:

- When a single actor or group of actors target systems for monetary gain or to disrupt them, this is known as cybercrime.
- Information collection for political or economic purposes is a component of cyberattacks.
- To undermine electronic networks in order to spread fear or panic, this is known as cyberterrorism.

An essential component of online safety is end-user protection. It is crucial to make sure

people are informed about how to defend their computers and selves against online dangers.

Review Paper on Human- Computer Interaction

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Abstract:

The concept of human computer interaction has emerged as a result of advancements in computer technology. This paper focuses on how people and computers interact in modern society. This review study takes a variety of techniques to discuss the terminology of human-computer interaction and the numerous contexts in which it occurs.

Keywords:

Computer- Human Interaction (HCI), Digital, Technology

Introduction:

Study of how people interact with computers to develop human-centered design concepts and techniques for top-notch technology interfaces. These days, computers play a big part in both healthcare and education. Digital devices like laptops, tablets, and hand-held mobile phones are becoming practically standard pieces of equipment. Electronic device utilisation is significant in the healthcare and educational environments because it provides appealing, more realistic, and intriguing facilities. Using digital gadgets in the classroom is also meant to improve the overall learning experience for all pupils. Additionally, it was clear that using digital tools in the classroom had a positive impact on students' motivation and their capacity to apply course based understanding, and whole academic achievement amongst students. The interaction design for a group of forthcoming computer technologies for human use is the topic of this review paper. These technologies differ from standard desktop computers both in terms of how they look and how they are used. Such technologies, which are frequently referred to as emergent technologies, include, for instance, wearable computers, context-aware computers, immersive virtual spaces, and pervasive computerised environments. Emerging technologies frequently suggest engagement that differs from the way computers are typically used. Location-aware auto navigation systems are one example of this. Such systems do not use WIMP-based interaction as we are accustomed to from conventional desktop computers; instead, they are operated by moving across physical space, listening to spoken directions, and pushing a few dedicated buttons near to the steering wheel. Consequently, such systems challenge the scope of established human-computer interaction styles and concepts and applicability of established methods and tools for their design.[1]

Human Computer Interaction Development Process: The development process of human computer interaction involves the relationship between the human, the computer interacting together to perform various tasks and generates the feedback reports to the user according to the type of information fed into the system by the user. These key players or parts in the development process are as discussed [7]:



An Overview of Digital Marketing

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Abstract:

As the world transitions from analogue to digital, so does marketing. Digital marketing, social media marketing, and search engine marketing are all becoming more and more popular as technology advances. The number of internet users is rising quickly, and as digital marketing relies heavily on the internet, it has benefited the most. Consumers are altering how they make purchases, and they prefer digital marketing to traditional marketing. This review paper's goal is to investigate the significance of digital marketing. This paper begins with an introduction to digital marketing before focusing on the many forms of digital marketing, the advantages, disadvantages and various uses and channels of digital marketing in today's era.

Introduction:

Marketing of products or services through the use of digital technology. 'Online advertising,' 'internet advertising,' or 'web advertising' are common terms used to describe digital advertising. Digital advertising is the practice of promoting products or services through digital technologies. The marketing strategy that uses internet-based marketing messaging to reach people. Internet, mobile phones, and other digital media are all examples of digital technology. The first personal computer (PC) was introduced by IBM in 1981, and for the first time, Channel Net Soft Advertising Group, an advertising agency that tried to incorporate numerous ad campaigns in soft form with the support of advertising digitalization, introduced the concept of digital marketing. This gave rise to promotional trials like Reader Reply Cards that were foreseen in magazines and in newspapers. [1]

Various channels of digital marketing:

Digital marketing consists of various channels which are medium used by the marketer to promote their products or services. As an advertiser one, the main aim is to select the channel which is best for communication and give maximum return on investment (ROI). The lists of important digital marketing channels are given below:

- Social Media: Social media marketing is currently one of the most significant forms of digital marketing. It is the digital channel with the quickest growth. The process of driving traffic to websites or blogs through social media platforms is known as social media marketing. Social media marketing, in Neil Patel's words, is the practise of developing content specifically for each social media platform in order to encourage user interaction and sharing. Social media marketing has profited the most from the rise in the percentage of internet users in the population, which has risen from 16.6 to 62 percent in 15 years.



WIRELESS SENSOR NETWORKS: IMPROVING PACKET DELIVERY PERFORMANCE

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Abstract:

A group of nodes arranged into a cooperative network is known as a Wireless Sensor Network (WSN). Each node has computing power that serves as a transceiver. A hacked node that drops all or some of the packets it is supposed to forward is said to be packet dropping. A hacked node that modifies all or some of the packets that are supposed to be forwarded is known as packet modification. Common techniques that an adversary can use to obstruct communication in wireless multihop sensor networks include packet dropping and alteration. In this study, we employ the modified HEED protocol for wireless sensor networks, where energy consumption and the number of dead nodes are reduced while the number of alive nodes, throughput, and packet delivery rates are raised.

Keywords: HEED, dead nodes, life time, received packets, packet delivery rate.

Introduction:

We used wired technologies for communication in previous years [1]. These technologies have the same disadvantages as using cable, making them unusable for long distances and unreliable as well. We were transferred to the wireless one in order to get around these limitations. We make our communication reliable and cable-free by utilizing wireless communication technology. Worldwide, there are numerous broad applications for wireless technologies. Wireless communications use satellite-based connectivity to communicate globally. Wireless sensor networks including RF modem, Bluetooth, WI-Fi, and Zigbee, among others, are used to communicate or transfer data in enclosed spaces or short-range applications like schools, colleges, offices, factories, and industries. The following are the main benefits of wireless sensor networks:

- Reliable one
- Authenticated one
- No use of cables
- Lesser cost than wired one

Different routing protocols have been developed to choose the best route in the IP network with the least amount of latency, the most throughput, the longest lifetime, and the least amount of packet loss to transport the data to the destination via intermediary nodes [2]. The process of picking the routes via a network along which to send and arrange movement is known as routing [3]. In order for routers to choose the best route between any two nodes on a computer network,



In what ways are Project Management Practices evaluated in the Construction Industry

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Abstract:

Project Management plays a role in the success of the project; successful project management in construction projects involves a diverse group of qualified project team members managed by expert project managers. Project managers need to possess a certain set of abilities in order to deliver projects on time and within the allocated budget. Additionally, a certain sort of procedure, such as initiating, planning, executing, monitoring and controlling, and closing, might be embraced by the project manager. The main goal of this research is to determine the impact of implementing project management processes on completing the project on time, as well as how these processes can assist and support him in communicating with project stakeholders to resolve conflicts and other issues. The research has looked into the practical project management strategies that must be used by the project team if the project is to be completed on schedule. The examination of the project process that results from ongoing, productive horizontal and vertical relationships between the project manager, his team, and project stakeholders from the start date to completion is crucial to understanding project management success.

Keywords:

Project management, Project Manager, Process of PM, Roles and Responsibilities, Activities, Communication

Introduction:

The construction sector contributes significantly to GDP, employment, and capital formation. It also has a considerable impact on a number of other sectors and has both forward and backward linkages [5]. A noteworthy amount of any country's savings are represented by its products because capital formation is one of the other contributions of the sector. The industry is vital to the national development of emerging countries because it gives birth to the nation's physical infrastructure and other economic assets.

Every country's economy is significantly influenced by the construction business, which employs large numbers of people from a variety of fields. This sector includes a wide range of initiatives that meet the requirements of people, societies, governments, and rapidly expanding economies. It saw significant growth and expansion in many parts of the world. Numerous infrastructure projects, including high-rise buildings, expansive malls, power sub-stations, highways, bridges, airports, hospitals, and the growth of numerous new cities with complete facilities, have been constructed. The majority of these projects are from the public sector, but others are from the private sector [3]. All of UGC CARE Group-1, Sr. No.-155 (Sciences)

Wireless Sensor Networks: Advancements, Challenges, and Applications

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Abstract:

Wireless Sensor Networks (WSNs) have emerged as a significant technological advancement in the field of pervasive computing and Internet of Things (IoT). These networks consist of small, low-cost, and power-constrained sensor nodes that collaboratively collect, process, and transmit data wirelessly. WSNs have found applications in various domains, including environmental monitoring, healthcare, smart cities, industrial automation, and agriculture. It highlights the key features and components of WSNs, including sensor nodes, sink nodes, and the communication protocols used for data transmission. It further explores the different types of sensors employed in WSNs, such as temperature, humidity, light, and motion sensors, along with the energy harvesting techniques used to power these nodes. The advancements in wireless sensor networks, including improvements in energy efficiency, network scalability, and data processing capabilities. It explores the integration of WSNs with emerging technologies like edge computing, machine learning, and artificial intelligence, enabling intelligent data analysis and decision-making at the network's edge.

Keywords:

Wireless Sensor Networks, Internet of Things (IoT), Sensor Nodes, Sink Nodes, Communication Protocols, Network Scalability

Introduction:

Wireless Sensor Networks (WSNs) have revolutionized the way we collect, monitor, and analyze data in various domains, ranging from environmental monitoring and healthcare to industrial automation and smart cities. These networks consist of small, autonomous sensor nodes that wirelessly communicate with each other to form a distributed sensing infrastructure [1]. With advancements in pervasive computing and the Internet of Things (IoT), WSNs have gained significant attention for their potential to provide real-time data collection and analysis, enabling efficient decision-making and resource management. In a wireless sensor network, each sensor node is equipped with sensing capabilities, processing capabilities, and wireless communication capabilities. These nodes collaborate to monitor physical or environmental conditions such as temperature, humidity, light, motion, and various other parameters. The collected data is then transmitted to a central node or sink node, which serves as a gateway to the external network, facilitating data transmission to the end-user or a central server for further processing and analysis. The communication within WSNs relies on specialized protocols that are designed to address the unique characteristics and constraints of sensor nodes, such as limited power, limited processing capabilities, and bandwidth constraints [2]. Additionally, the integration of WSNs with edge computing, machine learning, and artificial intelligence has enabled intelligent data analysis at the network's edge, reducing the need for extensive data transmission and facilitating real-time decision-making. The applications of wireless sensor networks are extensive and diverse. In environmental monitoring, WSNs enable real-time tracking and analysis of air quality, water quality, and soil conditions [3]. In healthcare, WSNs facilitate remote patient monitoring, fall detection systems, and smart healthcare solutions. Industrial automation benefits from WSNs through asset



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AN EVALUATION OF THE STUDIES ON HUMAN COMPUTER INTERACTION

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Abstract:

The growth of computer technology has led to the concept of human-computer interaction. Young adults in the new generation, who are educated and technically adept, are involved in research studies on human-computer interaction. The term "HCI" (human-computer interaction) refers to both technological worries about behaviour. Practical research in human-computer interaction primarily aims to reveal undiscovered perceptions about human behaviour and its relationship to technology. Simply said, resilience is a set of behaviours that enable us to overcome challenges. The word "resilience" has been used to describe a wide range of topics, including the economy, real estate, events, sports, business, psychology, and more. Self-efficacy, optimism, self-awareness, and the ability to derive meaning from other experiences are some of the fundamental components of resilience. Resilience is essentially made up of a variety of different abilities and skills for the goal of developing good connections. People should make use of this thorough approach to improve an organization's resilience. All of these things will be carried out by resilience in order to increase public awareness of the resources that are available to deal with current issues.

Keywords: Human computer interaction, Resilience, Technology

Introduction:

These days, the field of computing is expanding quickly. Additionally, the use of computers by humans is crucial for a variety of functions. HCI (human-computer interaction) is the study of how humans interact with computers as well as their behaviour, or how they behave around them. How far have computers developed for successful human interaction, as well as what are the things that are not developed for good human interaction. The human (the user), the interaction machine (the computer), and the techniques (how they interact) are the three components of HCI, as the name suggests. Therefore, everything here is about the interaction between a machine and a human and their shared perceptions. And with the programme (which was made using technology), human job can be completed quickly. Following that, people/humans would love to utilise the programme to complete

AN OVERVIEW OF FASHION APPAREL'S SUSTAINABILITY IN THE CONTEXT OF ENVIRONMENTAL WELL-BEING AND SUSTAINABLE DEVELOPMENT

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Abstract:

Environmental, employment-related, and societal issues have all presented hurdles to the fashion industry's sustainability efforts. The use of non-biodegradable materials that pollute ocean and land surfaces, degrade soil, and cause difficulties related to deforestation have been some of the major obstacles for the sector. Other issues include using bonded labor, child labor, and non-biodegradable ingredients. As a result of increased awareness of these sustainability issues among consumers and regulatory bodies, which are directed at the fashion industry and the notion of fashion, consumers' habits and lifestyles in terms of consuming fashion are changing. The idea of sustainable fashion was thus initiated and embraced by the fashion industry. The fashion industry has been forced to reevaluate the potential value-addition that adopting and practicing sustainability for their businesses may bring, when incorporated directly at the core of the company's value proposition and continuously throughout the company's supply chain. Additionally, expenditures will be reduced as more audited results serve as the foundation for future budgetary allocations for sustainable business practices for these enterprises in this industry. A win-win situation for all parties involved will result from this scenario, which will introduce more humane and sustainable practices into the fashion business. The goal of the present study is to examine the different problems, opportunities, and difficulties that surround sustainable fashion.

Keywords: Sustainability; Fashion industry; Environment; Sustainable fashion

Introduction:

The first step in considering fashion sustainability is to acknowledge an underlying reality: the fashion industry uses a lot of resources and produces pollution, even if its future success depends on minimizing its impact on the environment and society across the full life cycle of garment manufacture. In order to achieve this, it is necessary to lessen the effects of growing and manufacturing textile fibers as well as to lay a foundation of ethical behavior at all levels. It also entails expanding beyond concentrating on a small number of fiber types—typically cotton and polyester, or a combination of both—and developing a portfolio of substitute fibers with low resource intensity and potentially rich cultural heritage. Although in different ways, the production of cotton and polyester fibers harms the environment. Given that cotton is used so frequently in the production of clothing, it has the biggest detrimental influence on the environment. "To produce 1 kg of cotton, the weight of a single T-shirt and a pair of jeans, it can require more than 20,000 liters of water." Production of non-organic cotton is dependent on the use of toxic pesticides; according to the World Wildlife Fund, which was used in the above quote, "2.4% of the world's crop land is planted with cotton, yet it accounts for 24% and 11% of the global sales of insecticide and pesticide respectively." But even if the production of polyester uses less water and no pesticides than that of cotton, it still consumes more than three times much energy. Even worse, the demand for these fibers is rising globally despite the inherent unsustainable nature of their manufacture. [1]



Assessment of Company Social Responsibility in India

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Abstract:

Business organizations cannot view themselves as nothing more than a money-making machine. They have a moral and ethical obligation to contribute back to society in many ways because they are the main beneficiaries of and consumers of many social and natural resources. Corporate social responsibility should be viewed as an essential component of a business entity's primary operation rather than just as charity. Companies have been setting aside a sizable amount of their income for various CSR initiatives as a result of realizing this fact, and Indian businesses are not an exception. Companies are increasingly acting in a more socially responsible manner for two main reasons: first, the external reality of a rapidly changing society and environment, which forces them to adopt sustainable development for their own survival; and second, the internal reality of business innovation, which forces them to act responsibly in order to increase their profits. Though still a relatively new idea in India, CSR has gained traction in the last ten years or so as a result of government encouragement as well as business realization that CSR initiatives are a great way to engage the public. CSR encompasses not only the various initiatives businesses take to use their profits for various social and environmental development, but also the socially responsible business practices used to generate those profits in order to achieve an overall goal of social and environmental sustainability. The purpose of



Efficacy of Indian Whistle-Blowing Laws

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Abstract:

History demonstrates that insiders have always been willing to share their knowledge with others. Whistle blowing was discussed in ancient Greek literature millennia before. In his speech against Leokratis, the Athenian orator Lycurgus made the following statement: "Neither laws nor judges can bring any results, unless someone denounces the wrongdoers." The word whistle blowing possibly derives from the referee or umpire who announces a foul during a game by blowing the whistle, which would warn both the public and law enforcement officials of danger. Although the issue itself is not new, the term "whistle-blowing" is a relatively recent addition to the language of public and corporate affairs. This essay seeks to understand the idea of whistleblowers and the laws that pertain to them. Whistleblower protection is its main concern.

Keywords:

Protection of Whistle Blowers, Whistle Blowing, Whistle Blowers Protection Bill, Challenges.



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MATH IN REAL LIFE

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Abstract:

Most students have historically struggled with mathematics, which makes them doubt if they will ever be able to use what they have learned in practical situations. When questioned, teachers and parents acknowledge that pupils know very little about the application of mathematics in the real world. This essay's foundation is the use of maths in everyday situations. It is addressed how mathematics is used in everyday life for things like finance and banking, weather forecasting, computers and video games, search engines (like Google), music, and transportation and logistics. In addition to this, more sophisticated applications are also covered, including satellite navigation, military and defence, and crime prediction.

Keywords: Mathematics, Real life, Finance, Defence and Military, Google, Satellite navigation

Introduction:

The key to opportunity is mathematics. It is no longer exclusively a scientific language. Mathematics currently makes immediate and important contributions to Business, Health, Finance, and Defence. It is a highly significant subject for students because it provides doors to careers; consequently, students must be able to relate this subject to their real lives. As a result, mathematics teachers must teach mathematics using real-world concepts from students' personal lives. If mathematical concepts are taught officially by professors, pupils will meet several issues that they will be unable to solve.

The principal and standards for school mathematics has stated that mathematical instructions should enable students to

REVIEW ON NATURAL HAZARDS AND DISASTER MANAGEMENT**Akanksha Pathania¹ Ruchika Sharma²,**

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Abstract:

Disaster management refers to organizing the nation's reaction to disasters. India has a history of being particularly susceptible to natural disasters due to its particular geo-climatic characteristics. Landslides, earthquakes, cyclones, floods, and droughts would have all been frequent occurrences. The majority of disasters in India are brought on by floods. Approximately 60% of the landmass is vulnerable to earthquakes of varying magnitude, over 40 million hectares to floods, 8% of the total area to cyclones, and 68% to drought. This paper reviews disaster causes, their mitigation, the impact of disasters on people's lives, and the necessary actions that must be taken to lessen the disaster. Hospitals can make the necessary preparations and play a significant part in disaster response. Plans, to be effective, must be implemented through appropriately-targeted exercises. Building on an all-hazards approach, to more hazard-specific considerations can improve disaster preparedness as well as day-to-day efficiency.

Keywords: Disaster, Management, Hazards, Drought, flood, Earthquake, Damage, Floods

Introduction:

When it comes to managing resources and information during a disaster, disaster management is fundamentally concerned with how well and efficiently these resources are coordinated. Planning, coordination, communication, and risk management are all topics that are covered in disaster management, both on an individual and corporate level. Over the past few years, the Government of India has brought about a paradigm shift in the approach to disaster management. The earth has always been an unstable entity. The new strategy is based on the conviction that catastrophe mitigation must be incorporated into the development process for development to be sustainable. The requirement that mitigation be multidisciplinary and encompass all development sectors is another tenet of the strategy. The new approach is also a result of the conviction that spending on mitigation is significantly more economical than on relief and rehabilitation. In this country's policy framework, disaster management plays a significant role because the poor and underprivileged are the ones who suffer the most from tragedies and disasters.

The man who entered this scenario has been conducting exploration as part of his exercise to date in an effort to solve numerous puzzles. These riddles have been deciphered and kept inside the realm of academia. However, when people are the victims of riddles, they must be aware of what caused the catastrophe. Disasters are not completely isolated occurrences. Technological and scientific advancements allow for the reasonable and, in some cases, exact prediction of their likelihood of occurring, time, location, and strike severity. Since their occurrences have been shown to follow a clear

Analyzing the Differences between Internal and External Audits

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Abstract:

When we examine the development of internal audit from its inception to this point, it is clear that some external auditing operations were separated to create the internal audit function, which led to several instances when these two functions were readily misunderstood. The purpose of internal auditing is to offer value and enhance an organization's operations. It is an impartial, unbiased assurance and consulting activity. By introducing a methodical, disciplined approach to analyse and enhance the efficacy of risk management, control, and governance procedures, and by making suggestions to consolidate the efficiency, it aids an organisation in achieving its goals. Financial auditing is the process of professionally examining information with the goal of expressing an objective, responsible judgment in relation to accepted standards of performance meant to enhance the use of information. Through a methodical and organized approach, the internal public auditing assists the public entity in achieving its objectives by assessing and enhancing the effectiveness of the management system based on risk, control, and administration procedures management. The control refers to a continuous or periodic analysis of the activity or situation in order to track its progression and implement corrective action.

Keywords:

Internal auditing, internal public auditing, external audit, internal control

Introduction:

From both the external and internal audit perspectives, it is crucial that internal and external audit activities are coordinated. From the external audit perspective, this is important because it gives external auditors the opportunity to increase the efficiency of the financial statements audit; from the internal audit perspective, this coordination ensures that internal audit has access to additional vital information for the assessment of risks and control.

Although the roles of internal and external auditors differ, they both work towards the same overarching objective: serving the public by promoting effective, efficient, and cost-effective management and ensuring the highest level of regularity and propriety for the use of resources [5]. Internal audit was given attention due to its primary function in increasing compliance with laws and acts as well as fraud detection. More specifically, it oversees the validity, legality, and effectiveness of financial statements and conducts internal supervision, checks the accounting books and pertinent assets in accordance with acts and laws [6]. Additionally, an efficient internal audit function can be a very helpful tool for audit committees, management, and external auditors to fulfil their governance mandates and successfully carry out their tasks. The value that Internal Audit provided to the

THE MEASUREMENT AND ANALYSIS OF DIFFERENT PARAMETERS RELATED TO HEAT TRANSFER

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Abstract:

To comprehend solidification processes, a thorough literature research on heat transfer analysis has been used in this work. Nevertheless, it is frequently challenging to exactly determine the values of all input parameters, including thermal conductivity and heat transfer coefficient. This paper develops a data-assimilation-based parameter estimate approach for heat transfer analysis. The applicability of the particle filter, a data assimilation approach, was thoroughly examined in the authors' prior work, which used it to estimate the thermal conductivity and heat transfer coefficient in mold casting heat transfer analysis. Based on trials, the application of a novel data assimilation approach to the calculation of thermal conductivity and the heat transfer coefficient is examined in this paper. It is demonstrated that using three cooling curves for thermal conductivity and two cooling curves for the constant or time-dependent heat transfer coefficient, respectively, one can properly estimate both parameters on their own. Moreover, it is possible to measure the time-dependent heat transfer coefficient and thermal conductivity concurrently and accurately.

Key words: Heat transfer, Thermal conductance, Experimental, Transfer analysis, parameters

Introduction:

To create more dependable and long-lasting components, the heat transfer rate of contact surfaces has to be identified and managed. The precision of the input parameters determines the analysis of heat transport in its entirety. However, when new alloys and newly developed processes are taken into consideration, it is not always simple to acquire the values of input parameters with high precision, such as thermal conductivity k and heat transfer coefficient h . The alloy undergoes liquid phase fluid movement during the solidification process, and the solute redistribution at the solid/liquid interface also modifies the concentration distribution. As a result, the heat transfer analysis should be explained along with the fluid dynamics and time change of the concentration field. The heat transfer study is frequently performed without explicitly specifying fluid dynamics and the temporal change of concentration field, though, because such an analysis typically demands large computing costs. The heat transfer analysis's usage of k in this situation relates to an apparent value that is particular to each casting problem and implicitly takes the effects of fluid flow and concentration change into account. However, because the apparent value varies on a number of variables, including the alloy system and casting circumstances, it is challenging to evaluate it simply and properly. Developing a straightforward technique to ascertain the apparent value of k is crucial. Furthermore, it is crucial to note that even the real value of k is not always known, particularly in multi-component alloys. [1]

The transport of heat across contacts, particularly between rough surfaces, has been the subject of countless experimental and theoretical investigations. In [3], one of the most well-known contact heat transfer models was presented. For isotropic surfaces under plastic deformation, this theory—known as CMY—is used. Based on the CMY model, other models were created, such as Mikic and Yovanovich's

THE NEXUS OF URBANIZATION AND CIVIL INFRASTRUCTURE ON BIODIVERSITY

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Abstract:

Urbanization and the expansion of civil infrastructure have become defining features of the modern era. As cities grow and develop, they exert significant pressure on the natural environment, leading to profound consequences for biodiversity. This abstract explores the intricate relationship between urbanization and civil infrastructure and their impact on biodiversity. Urbanization, characterized by population growth and the conversion of natural landscapes into built environments, alters ecosystems, disrupts habitats, and can lead to the fragmentation of once continuous ecosystems. In this context, civil infrastructure plays a pivotal role in shaping urban landscapes, influencing the degree and nature of its impact on biodiversity. Roads, buildings, transportation networks, and other elements of civil infrastructure can act as barriers, limiting the movement of species and creating ecological traps that threaten local wildlife. The interactions between urbanization, civil infrastructure, and biodiversity are complex. While urban areas can harbor unique pockets of biodiversity, they often contribute to the loss of natural habitats and the decline of species. Yet, innovative urban planning and engineering solutions have the potential to mitigate some of these adverse effects. The integration of green spaces, wildlife corridors, and sustainable urban design can help restore ecological connectivity and promote coexistence between humans and wildlife. This abstract highlights the need for interdisciplinary research and cooperation among urban planners, engineers, ecologists, and policymakers to address the challenges posed by urbanization and civil infrastructure on biodiversity. By examining the synergies and trade-offs between urban development and conservation efforts, it is possible to devise strategies that allow urban areas to thrive while safeguarding biodiversity.

Keywords: Urbanization, Civil infrastructure, Biodiversity, Urban development, Habitat fragmentation, Wildlife corridors, Ecological connectivity, Sustainable urban planning, Conservation, Ecosystem disruption

Introduction:

The rapid and ongoing process of urbanization is a global phenomenon with far-reaching consequences. Urban areas are projected to house two-thirds of the world's population by 2050, and this relentless growth is accompanied by the expansion of civil infrastructure, including roads, buildings, bridges, and transportation networks. These urbanization trends are fundamentally altering landscapes, often at the expense of the natural world. Biodiversity, which encompasses the myriad of species, ecosystems, and genetic variation on Earth, is under substantial threat from urbanization and civil infrastructure development [1]. The ongoing global trend of urbanization is transforming the world's landscape at an unprecedented rate. As humanity increasingly gravitates toward urban centers, the expansion of cities and the development of civil infrastructure have become defining features of the modern era. While these changes offer numerous benefits, including economic opportunities and improved living standards, they also exert significant pressure on the natural environment. As cities expand, natural habitats are frequently transformed into urban landscapes, leading to habitat loss and fragmentation. These changes

IMPROVEMENT OF SECURITY IN CLOUD COMPUTING USING CRYPTOGRAPHY

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Abstract:

Cloud computing is one of the important developments in information technology, but in a cloud setting, the security issue of data storage is a major issue. In order to increase the security of cloud data, a system employing hashing, encryption, and information concealment is suggested in this work. We used the symmetric AES encryption method with the asymmetric RSA encryption algorithm to implement hybrid encryption during the data encryption phase. After that, the LSB method will be used to conceal the encrypted data within an image. We employ the SHA hashing method throughout the data validation stage. Additionally, in our proposal, the data is compressed with the LZW technique before being concealed in the image. As a result, it enables the maximum amount of data concealing. We can accomplish strong data security by utilizing information concealment technologies and hybrid encryption.

Keywords: Cloud Computing, Healthcare, Encryption, Cryptography.

Introduction:

One of the most current and groundbreaking technologies in the world is cloud computing [1]. The use of cloud computing is expanding quickly in daily life.

Cloud Computing in Healthcare Industry:

The use of cloud computing in today's world is so pervasive that it has even reached the health care sector. We can anticipate that a significant portion of healthcare services will move to the cloud as cloud computing in health care continues to advance at a rapid rate in recent years. As a result, more emphasis is being placed on delivering a cost-effective and efficient healthcare service to people all over the world.

The healthcare sector is making the effort to switch to these cloud-based platforms, despite the wide spread perception that certain restrictions and security concerns with the cloud would slow down the transition. To give their patients better healthcare services, many hospitals and doctors are turning their attention to these clouds nowadays.

Cryptography:

Therefore, cryptography [2] can be used for user authentication in addition to protecting data from theft or modification. Depending on the type of key used, cryptography can be split into the following three categories: secret key (symmetric) cryptography, public key (asymmetric) cryptography, and hash functions. the exponential growth in the transmission of multimedia data via both secure and open networks, including the widely accessible internet and local networks like shared networks and local

A Comprehensive Review of Data Mining Techniques and Applications

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Abstract:

Data mining is a crucial technique in the field of data analysis, aimed at discovering valuable patterns, relationships, and insights from large and complex datasets. It involves the application of various algorithms and statistical methods to discover hidden information, relationships, and trends within the data. Data mining highlights the importance of data preprocessing, which involves cleaning, transforming, and integrating data to ensure its quality and usability for analysis. Feature selection, a crucial step in data mining, is also discussed, emphasizing the identification of relevant and informative attributes that contribute to the mining process. The application of data mining techniques in different domains. It explores the business and marketing sector, where data mining is employed for customer segmentation, market basket analysis, churn prediction, and fraud detection. In the healthcare industry, data mining techniques assist in disease diagnosis, patient monitoring, and treatment prediction. The abstract also highlights data mining applications in finance, telecommunications, social media, and other areas, showcasing the wide range of domains benefiting from this powerful analytical approach. The significance of data mining in the era of big data and its potential to provide valuable insights for decision-making and strategic planning.

Keywords:

Data mining, Data quality, Telecommunications, Data integration, Big data, Data handling, Social media

Introduction:

In today's data-driven world, organizations and researchers face the challenge of extracting meaningful insights from vast amounts of data. Data mining techniques provide a valuable solution to this problem, allowing for the discovery of hidden patterns, relationships, and knowledge within complex datasets [1]. By applying various algorithms and methodologies, data mining uncovers valuable information that can be used for decision-making, prediction, and optimization. The importance of data mining is a powerful tool in the data analysis toolkit [2]. It emphasizes the role of data preprocessing in ensuring data quality and discusses techniques such as data cleaning, transformation, and integration. The classification which involves assigning instances to predefined classes or categories is discussed, along with its

AN OVERVIEW OF THE ROLE OF ENTREPRENEURIAL ACTIVITY IN ECONOMIC DEVELOPMENT

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Abstract:

In nations that have significantly reduced poverty, entrepreneurship has had a comeback. Since it stimulates economic activity in all areas of the people's economic lives, entrepreneurship is the driving force behind a nation's economic growth. Innovation, job creation, and product development are all areas where entrepreneurship plays a significant role. Not only does it promote self-employment, but it also establishes a framework for substantial job options. By encouraging capital creation, raising the per capita income, raising the standard of life, and achieving balanced growth by reducing regional inequities, it supports economic growth. The term "entrepreneurship" refers to all of the tasks that must be completed by an individual in order to start and manage a business enterprise in light of the shifting social, political, and economic circumstances. Entrepreneurship encompasses tasks related to anticipating consumer preferences, emotions, and behaviors, as well as tastes and styles, and starting a firm to satisfy all of these consumer demands. Entrepreneurship is regarded as a "new product" that would enable businesspeople to create new organizational structures for their companies and new business ventures to meet the shifting needs of society. In order to build risky firms that are also well suited to the shifting economic conditions, entrepreneurs must have the ability to evaluate the risks involved. The environment (internal as well as external) in which entrepreneurs must operate is a key factor in the growth of entrepreneurship. The historical and present entrepreneurial actions of society have a tight connection to entrepreneurs. The social, political, and economic crises are where business possibilities are found, and as a result, these crises create an environment that is ripe for new company initiatives to be developed. From this angle, it is accurate to say that entrepreneurial activities are the end product of ongoing entrepreneurship development programmes.

Keywords: Entrepreneurship, Employment Generation, Economic Growth.

Introduction:

The ability of a person or a group of people to create or find an opportunity and take advantage of it to benefit society, in turn leading to success for the innovators and their organization, is usually understood to be the definition of entrepreneurship. Over the years, economists and policymakers have been more and more interested in the connection between entrepreneurship and the economic progress of a nation. However, whereas some people detect a direct relationship, others see an indirect one. This curiosity has been stoked by a desire to comprehend how entrepreneurship affects a nation's economy. The impact of entrepreneurship on a nation's economy is acknowledged by both economists and decision-makers. In truth, entrepreneurship has long been seen as the primary driver of economic progress and is now widely regarded as a catalyst for the extension and promotion of productive activities in all sectors of the global economy. Every area of economic growth is impacted by entrepreneurship, which not only spurs growth

A COMPARATIVE STUDY OF VARIOUS BIOMETRIC TECHNIQUES

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Abstract:

Due to the vulnerability of traditional password-based security methods, we are seeing an increasing number of occurrences of cybercrime, data leaks, data modification by unauthorized users, hacking of personal accounts, etc. these days. This has led to the creation of an even more secure system requirement that could resolve these security-related problems. Biometric authentication technology offers an alternative that is impenetrable because it uses software to identify or validate users by comparing the data they provide with digital images of their distinctive characteristics. The identity is more trustworthy because this data is un-copy able and un-hack able.

Introduction:

"Biometrics" implies "life measurement" however the term associated with the utilization of unique physiological characteristics to distinguish an individual. It's a new way to verify authenticity. Biometrics utilizes biological characteristics or behavioral features for recognize an individual. In real a Biometrics system is a pattern identification system that uses various patterns such as iris patterns, retina design and biological characteristics like fingerprints, facial geometry, voice recognition and hand recognition and so forth. Biometric recognition system provides possibility to verify one's identity simply by determining "who these people are" instead of "what these people possess or may be remembered". The very fact that makes it really interesting is that the various security codes like the security passwords and the PIN number could be interchanged among people but the physical traits cannot be. The principle use of Biometric security is to change the existing password system. There are numerous pros and cons of Biometric system that must be considered. [1]

Biometric Framework:

A normal biometric framework comprises of four principle segments, specifically, sensor, extractor, matcher and choice modules. A sensor is utilized to secure the biometric information from a person. A quality estimation calculation is once in a while used to learn whether the obtained biometric information is adequate to be prepared by the resulting parts. At the point when the information is not of adequately top notch, it is generally re-procured from the client. The element extractor gathers just the remarkable data from the procured biometric example to frame another representation of the biometric characteristic, called the list of capabilities. In a perfect world, the list of capabilities ought to be one of a kind for every individual (amazingly little between client similitude) furthermore invariant regarding changes in the distinctive examples of the same biometric quality gathered from the same individual (greatly little intraclient variability). In the middle of confirmation, the list of capabilities removed from the biometric specimen (known as inquiry or info or test) is contrasted with the layout by the matcher,



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CYBERSECURITY THREATS AND MITIGATION STRATEGIES IN THE DIGITAL AGE

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Abstract:

The Internet of Things (IoT) interconnects physical and virtual objects embedded with sensors, software, and other technologies, which exchange data using the Internet. The rapid growth of digital technologies in today's society has given rise to a complex and ever-evolving landscape of cybersecurity threats. This review paper examines the various types of cybersecurity threats prevalent in the digital age and explores effective strategies for mitigating these risks. Through an extensive analysis of scholarly articles, industry reports, and expert opinions, this paper provides valuable insights into the challenges faced by individuals, organizations, and governments in safeguarding their digital assets. Emphasizing the importance of proactive measures and collaborative efforts, the paper outlines key mitigation strategies that can enhance cybersecurity resilience. By staying informed about emerging threats and implementing robust protective measures, stakeholders can navigate the digital landscape with confidence and protect their critical information and systems from persistent and sophisticated adversaries.

Keywords: Cybersecurity, Digital age, Threat landscape, Mitigation strategies

Introduction:

Cybersecurity threats come in various forms, ranging from malicious software (malware) and hacking attempts to social engineering and insider threats. The motives behind these attacks can range from financial gain and intellectual property theft to espionage and disruption of critical infrastructure. The constantly evolving threat landscape presents an ongoing challenge for individuals, organizations, and governments worldwide. To address these challenges, cybersecurity employs a multifaceted approach that combines technical, procedural, and human elements. It involves implementing robust security measures such as firewalls, encryption, intrusion detection systems, and access controls. Additionally, cybersecurity emphasizes the importance of risk assessment and management, security awareness training, incident response planning, and collaboration among stakeholders. The consequences of cyber attacks can be severe, leading to financial losses, reputational damage, privacy breaches, and even the compromise of national security. As a result, governments and organizations have recognized the



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INNOVATIVE METHODS USED BY SCIENCE TEACHERS FOR STUDENTS LEARNING

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Abstract:

Teachers and learners should be equipped with relevant 21st century skills such as innovative to thrive academically and professionally. This study examined perceptions of Science teachers towards Innovation. The objectives were to find out Science teachers' understanding of Innovation, identify factors perceived vital in developing Innovation, and discover Science teachers' own beliefs about Innovation, how they plan and foster Innovation in their classes. The study population was 26 Science teachers in 10 educational institutes in a city. Random sampling was used to select 20 teachers from the population. Research instruments were used to collect data and these were the Innovation Perception Questionnaire for Science Teachers (CPQPT), Innovation Rubric for Science Lesson Plans (CRPLP) and Innovation Rubric for Science Lesson Observation (CRPLO). Provoking questions during Science lessons were the most important factors in developing the Innovation of learners. The most commonly held beliefs were building the confidence of learners to become divergent thinkers and providing them an opportunity to exercise creative thinking. Although the majority of Science teachers had no problems planning for innovative ideas during lessons on wave motion; they experienced challenges in the implementation of activities for implementing and enhancing the Innovation of learners.

Introduction:

Different methods of teaching! Nowadays, many teachers are trying to keep their classes as far as possible from that scenario and let their students get more involved in learning by finding different approaches to teaching them. According to Fink (2003), for learning to occur, there has to be some kind of change in the learner. Significant learning requires that there be some kind of lasting change that is important in terms of the learner's life. This change can only be evident if learners develop Innovation skills to address different issues. Fink developed a taxonomy based on six kinds of significant learning which include foundational knowledge, application, integration, human



Throughput Improvement in Wireless Sensor Networks Using Energy-Efficient Strategies

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Abstract:

One of the main considerations while building routing protocols for wireless sensor networks (WSNs) is network longevity and performance. However, the majority of the current strategies either focus on increasing throughput or extending network lifetime. An energy-efficient routing technique for increasing throughput in WSN is presented in this paper. For energy-efficient forwarding node selection, cluster heads rotation, and both intra- and inter-cluster routing, the proposed approach takes advantage of multilayer cluster design. We rotate the cluster head position among different nodes depending on two threshold levels to increase throughput while lowering the amount of missed packets. Comparing the suggested system to other similar approaches described in the literature, simulation results show that the proposed scheme performs more efficiently in terms of a variety of metrics.

Keywords:

LEACH, Dead Nodes, Alive Nodes, Throughput, Energy

Introduction:

In wireless communication, wireless sensor networks are crucial. The use of wireless sensor networks is advantageous in a variety of fields, including the military, civil, and healthcare. The sensor nodes that make up this network have the ability to perceive changes in humidity, pressure, and temperature [1]. Data from the physical environment is collected, processed, and transmitted to the base station using this network. Sensor networks are made up of several kinds of sensors, including seismic, low sample rate magnetic, thermal, visual, infrared, and radar. The ability to monitor a wide range of environmental factors, such as vehicle movement, lightning conditions, pressure levels, soil composition, and noise levels, is one of the benefits of WSNs. Sensors buried below for precision agriculture, intrusion detection, disaster management, and target field imaging are used by the military. The handling of the bulk of packets sensed and sent to each network node continues to be a significant problem. There are thousands of nodes in a WSN. Although the information aggregation and information fusion algorithm techniques are effective, they could always be improved. Different routing protocols have been developed to choose the best route in the IP network for transferring data to the destination via intermediate nodes with the least amount of delay, throughput, lifetime, and UGC CARE Group-1, Sr. No.-155 (Sciences)



The Role of Budget Analysis and Budgetary Controls in an Organization's Operations

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Abstract:

Setting goals and creating a procedure that serves as a framework for an organisation to clearly express its overall planned activities are both components of budgeting and budgetary control. Budgeting is the process of quantifying these scheduled actions in terms of money, whereas budgetary control is the process of creating a reliable system to ensure intended results. The results showed that participation of all relevant stakeholders in the budget preparation, given the established procedures in government circles, while emphasizing a deliberate and faithful implementation by all responsible officers, is a necessary and sufficient condition for achieving effective budgeting and budgetary control. This is predicated on the organisation having a mental image of the current situation in relation to the anticipated future situation. Therefore, it was advised that in order to ensure overall goal attainment, all essential stakeholders should be included in the budget process, from planning to implementation, since budgeting and budgetary control contribute to management efficiency and high productivity of an organisation.

Keywords:

Budgeting, Budgetary Control, Effective, Efficient, Management, Performance

TRENDS IN STRUCTURAL HEALTH MONITORING (SHM) TECHNIQUES FOR CIVIL INFRASTRUCTURE

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Abstract:

Structural Health Monitoring (SHM) has evolved into a critical field in civil engineering, ensuring the safety, longevity, and performance of infrastructure assets. This review paper provides an extensive analysis of the latest trends and developments in SHM techniques for civil infrastructure. Over the past few decades, SHM has witnessed remarkable advancements driven by technological innovation, data analytics, and a growing emphasis on sustainability and resilience. This paper offers a comprehensive overview of the key components of SHM systems, including sensor technologies, data acquisition methods, data analysis techniques, and damage detection algorithms. It explores how traditional sensors like accelerometers and strain gauges are being complemented by emerging technologies such as fiber optics, wireless sensor networks, and unmanned aerial vehicles (UAVs), enabling more comprehensive and real-time monitoring. The integration of SHM with data analytics and artificial intelligence (AI) is a significant trend, as it allows for predictive maintenance, anomaly detection, and optimization of maintenance strategies. Machine learning and deep learning algorithms are increasingly being applied to interpret vast amounts of sensor data, enabling early detection of structural anomalies and deterioration. Furthermore, it discusses the evolving role of SHM in enhancing the resilience of civil infrastructure to natural disasters, climate change, and extreme events. Strategies for implementing SHM in retrofitting and rehabilitation projects are also explored, highlighting the cost-effectiveness and sustainability benefits. It evaluates the success stories and challenges faced in the field, emphasizing the need for standardized protocols and data sharing to promote interoperability and facilitate large-scale adoption.

Keywords: Structural Health Monitoring (SHM), Civil Infrastructure, Sensors, Data acquisition, Fiber Optics, Wireless Sensor Networks, Unmanned Aerial Vehicles (UAVs), Artificial Intelligence (AI), Machine Learning

Introduction:

Civil infrastructure, including bridges, buildings, dams, pipelines, and transportation networks, forms the backbone of modern society. These essential assets facilitate the flow of goods, services, and people, underscoring their pivotal role in economic development and societal well-being. However, maintaining the integrity, safety, and performance of civil infrastructure is an ongoing challenge, especially in the face of aging structures, environmental pressures, and increased demands for sustainability and resilience [1]. In response to these challenges, Structural Health Monitoring (SHM) has emerged as a critical field within civil engineering, offering innovative solutions to monitor, assess, and manage the condition of infrastructure assets. The trends in SHM techniques for civil infrastructure represent a dynamic landscape characterized by technological innovation, data analytics, and a growing emphasis



Brief Analysis of the Impact of the Indian Banking Sector on The Economic Side

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Abstract:

As a result of cutting-edge goods and technologies, India's banking sector has experienced substantial growth. This review study's subject is how banks helped the Indian economy grow. Modern business, business facilitation, employment opportunities, banking services, financial support, the agricultural sector, trade, and loans are determined to be the variables influencing the function of the bank in the expansion of the Indian economy. How swiftly the sector will expand depends on the services that banks provide to their customers in many ways. Most people agree that a stable and reliable financial system is necessary for long-term economic growth. The expansion of any economy is based on the banking industry. The banking sector in India has seen numerous economic crises. Recent events include the COVID-19 outbreak and the ensuing economic collapse. The overall health of the global economy is quite fragile. In this article, an effort has been made to present the current situation of the Indian banking sector. The factors influencing the Bank's contribution to the growth of the Indian economy will be examined in this essay.

Keywords:

Banking, Profits, Profitability Measurements, Liquidity, Assets

UNDERSTAND THE USE OF EMERGENCY MANAGEMENT SYSTEM TO TACKLE THE PROBLEMS

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Abstract:

In the paper, many stages of disaster management, including preparedness, risk reduction, recovery, and disaster response, are briefly shown via the use of information technology. We discover that there are sporadic talks on the employment of technology in each step. There is a lack of a comprehensive viewpoint on information technology utilization across all stages of disaster management. Information processing, sharing, and recording depend heavily on information systems. The performance of the system is improved when several jobs are combined. By doing this, we make the case for the need of having a thorough plan for using technology at all phases of disaster management as well as the requirement for data standards to facilitate information sharing across various systems and stakeholders. The article's focus is on the complex inter-organizational linkages that result in common objectives and are applied locally, particularly in the context of county-level emergency management. The Paper provides a conceptual explanation of the governance idea as well as a synopsis of relevant studies in relation to emergency management.

Keywords: Disaster management, Information technology, Emergency, Recovery, Utilization

Introduction:

Large-scale natural and man-made catastrophes have both increased in their ability to claim a great toll in lives and financial resources. For disaster management to be effective, information is essential. Social media might provide disaster assistance organisations with new information sources. It improves both two-way communication and situational awareness. According to Tim and Pan [3], about 800,000 photographs were uploaded to Instagram using the hashtag #Sandy in the aftermath of Hurricane Sandy in 2012. Their locations were also displayed in these pictures. After the 2015 earthquakes in Nepal, Digital Humanitarian created a network of digital volunteers and created a number of digital tools for disaster management [2].

The ability to avoid and respond to emergencies in both urban and rural regions must be substantially strengthened in light of the realities and the anticipated future of a growing frequency and magnitude of catastrophes. "A complex and multi-disciplinary process of planning and implementing measures that aim at preventing risks of disasters and enabling effective response whenever an undesirable event occurs" [4] is how emergency management, often known as disaster management, is defined. Since the 1980s, a comprehensive framework including four phases of disaster management—mitigation, readiness, response, and recovery—has been created to direct practices.

Mitigation is defined as "actions taken to prevent or reduce the cause, impact, and consequences of disasters" in the FEMA guideline. To lessen the possibility that risks would turn into disasters, techniques for risk analysis and mitigation must be implemented. Planning, instruction, and training are all components of preparedness that assist people and communities in being ready. Any action performed during or just after an emergency is referred to as a response. This includes attempts to preserve lives and stop more property damage. The best course of action for catastrophe response is to

**REGULAR LOBSTER IS A VERTEX GRACEFUL BY CONGURENCE CLASS****Gurwinder Kaur¹ Neha Sharma²**

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Abstract:

In this article, we show that an algorithm regular lobster is a vertex graceful by the use of congruence class. A regular lobster is defined by each vertex in a path is adjacent to the path P2. A regular lobster is vertex graceful. The graph A (m, n) obtained by attaching m pendent edges to the vertices of the cycle Cn is called Actinia graph. A graph A(mj , n), mj is monotonically increasing with difference one, $2 \leq j \leq n$ is vertex graceful, $1 \leq m_2 \leq 3$ when n is odd.

Keywords: Graph theory, vertex, edges, congruence class, and vertex graceful.

Introduction:

A graph G with p vertices and q edges is said to be vertex graceful if a labeling $f: V(G) \rightarrow \{1, 2, 3, \dots, p\}$ exists in such a way that the induced labeling $f+: E(G) \rightarrow Z_q$ defined by $f+((u, v)) = f(u) + f(v) \pmod{q}$ is a bijection. The concept of vertex graceful ($V(G)$) was introduced by Lee, Pan and Tsai in 2005. Generally, if replacing q by an integer m and $f: E(G) \rightarrow Z_m$ also is a bijection, such a labeling is called a Smarandachely vertex m-labeling.

Thus a vertex graceful labeling is in fact a Smarandachely vertex q-labeling. . The symbols $V(G)$ and $E(G)$ denote the vertex set and edge set of the graph G. The cardinality of the vertex set is called the order of G. The cardinality of the edge set is called the size of G. A graph with p vertices and q edges is called a (p, q) graph[2]. All the graphs considered here are finite, undirected and connected with no loops and multiple edges. As usual $n = |V|$ and $m = |E|$ denote the number of vertices and edges at a graph G, respectively. For the open neighborhood of a vertex $v \in V$ is $N(v) = \{u \in V / uv \in E\}$, the set of vertices adjacent to v. The closed neighborhood is $N[v] = N(v) \cup \{v\}$. In general, we use $h X_i$ to denote the sub graph induced by the set of vertices X. If $\deg(v)$ is the degree

of vertex v and usually, $\delta(G)$ is the minimum degree and $\Delta(G)$ is the maximum degree. The complement G_c of a graph G defined to be graph which has V as its sets of vertices and two vertices are adjacent in G_c if and only if they are not adjacent in G. Further, a graph G is said to be self-complementary (s.c), if $G \sim G_c$. For notation and graph theory terminology we generally follow [3], and [5].. A simple graph fig1 and bipartite fig 2 are given below[7]:



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TEACHING STRATEGIES FOR GEOMETRY

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Abstract:

Teachers should be aware of the difficulties among students in understanding different abstract concepts. By adopting alternative approaches, can provide the necessary support to pupils trying to comprehend the difficult mathematical ideas and ultimately transform students' beliefs. Geometry is often one of the trickiest concepts for teachers to teach—and so often our textbooks and other resources either present things too quickly or in a way that simply isn't engaging enough or with enough practice opportunities. Geometry actually crosses content areas—both measurement and geometry So, Knowledge can be constructed rather than reproduced. Teachers should provide students some real-world, case-based learning environments and prevent predator mined instructional sequences.

Keywords: Mathematics, Geometry, Teaching Strategy, cognitive atmosphere

Introduction:

Geometry is the mathematical study of shapes and patterns. Geometry, as one of the most important branches of Mathematics, has a very significant place in education. Most of the items that we mostly see and use in our environment are composed of geometrical shapes and objects. Utilizing these objects and shapes efficiently depends on understanding the relations among them. We also make use of geometrical thoughts in solving problems (like painting, lining-wall etc.), in defining the space and running our profession as well. Geometrical shapes and objects are a part of our jobs and works. Making effective use of these objects depends on defining them and understanding the relation between the object and its duty [1].

The first inspiration sources of the mathematics phenomenon are the nature and the life. It is more required and easier to relate its geometrical side of this phenomenon. What people have done on behalf



Mathematics and Pyramids

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Abstract:

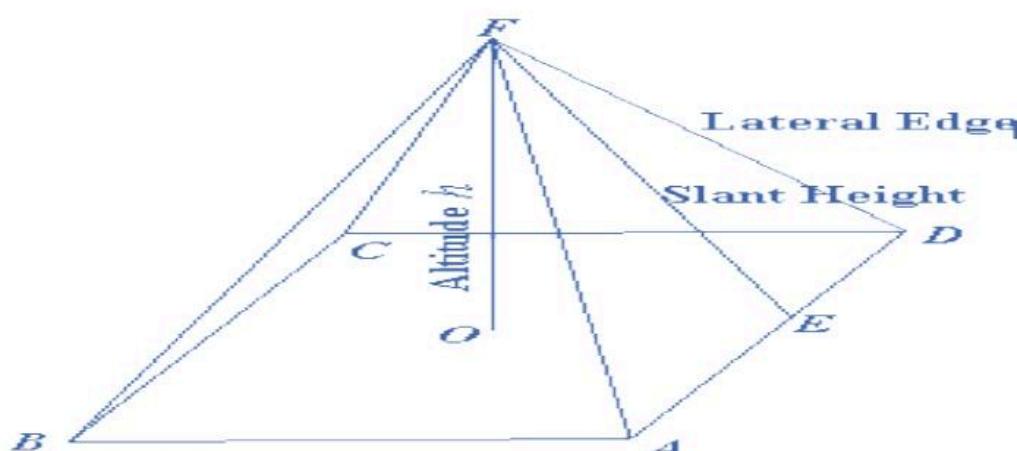
Seven wonders, or monuments of human ingenuity, once stood throughout the ancient world. With the exception of the Great Pyramid of Giza, all of those wonders vanished into the sands of time when the civilizations collapsed. Although it has given rise to innumerable tales, its true narrative is one of triumph over insurmountable obstacles, astounding human ingenuity, and one man's fervent desire to live forever. It is the oldest and the sole remaining ancient wonder of the world, dating back 4,500 years. But what do we actually know about it? Scientists and historians are still attempting to determine how the Egyptians were able to construct this enormous pyramid. In terms of engineering, the pyramid's precision is one of its most significant aspects. [1]

Keywords:

Pyramid, Monuments, Egyptian kingdom, Golden Ratio, Pythagoras Theorem, Mathematics

Introduction:

A **pyramid** is solid figure whose base is a polygon and whose sides meet at a common point. This common point is called the **vertex** or **apex** of the pyramid. The triangular sides are called the **lateral faces**. The **altitude** of a pyramid is the perpendicular distance from the vertex to the base.





IMPACT OF COMPUTER IN HIGHER MATHEMATICS CLASS

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Abstract:

There are a number of factors that attributes to the students' poor performance in the subject which includes, inadequate facilities in the schools like the study areas, text books, qualified teachers, failure to use visual aids when teaching, gender stereotype, lack of role models for girls, and the ineffectiveness instructional methods used by teachers. This study sought to find out if the use of computers interactive learning strategy during instructions of vectors and statistics in mathematics to form two students had effects on their performance. Vectors and statistics are topics that can be well illustrated by use of computers graphics and animations. The growing need for technology advancement in developing countries is of paramount importance for developing countries to be fully developed. There is a great need to integrate the use of computer in their knowledge advancement. Mathematics is a strong tool for use in day to day life as an important tool for the existence of any individual in the society. It equips Learners with unique and powerful set of tools to understand the world and analyze the problems. There is however inadequate documented information in research conducted on effects of the use of computers interactive learning strategy on students' achievement in mathematics. . The results also show that there was no significant gender difference in achievement when learners are taught using computer interactive learning strategy. Conclusions, implications and recommendations of the study are summarized.

Keywords: Computer interactive learning, Mathematics, Learners, Assessment, Higher Mathematics.

Introduction:

Mathematics plays a key role in the society for entire development. There has been persistent dismal performance in the subject globally. In the United States of America (U.S.A) for example which is viewed as a global leader in many aspects, including Economy, Information technology, medical research, higher education, sports and scientific fields has lagged behind other countries of the world in learners' mathematics achievement as indicated by Trends in International Mathematics and Science Study . Earlier studies have shown that learners who perform cooperative learning group tasks tend to have higher academic test scores, higher self-esteem, greater numbers of positive social skills, and greater comprehension of the content and skills they are studying[1][2]. In this learning arrangement students work in-groups of 3 to 5 cooperatively to ensure their own learning and the learning of all others in their group [1]. This emphasis on

EMERGING TRENDS IN SOIL STABILIZATION TECHNIQUES FOR ROAD CONSTRUCTION

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Abstract:

Road construction is a critical infrastructure development endeavor, and the sustainability, longevity, and cost-effectiveness of road networks largely depend on the quality of the foundation, which is often the soil beneath. Soil stabilization techniques have evolved significantly over the years, driven by the need to enhance road performance, minimize maintenance costs, and reduce environmental impacts. This abstract provides an overview of the emerging trends in soil stabilization techniques for road construction, highlighting their potential to revolutionize the industry. Traditionally, road construction relied heavily on conventional methods like gravel and asphalt. However, these methods often prove inadequate in challenging soil conditions, leading to frequent repairs and significant costs. Emerging trends in soil stabilization techniques focus on addressing these issues while also considering environmental sustainability. One prominent trend is the use of innovative binders and additives, such as geopolymers and nanomaterials, which can significantly improve soil strength and durability. These materials, when mixed with soil, create stable and resilient foundations that resist deformation and erosion, even in adverse weather conditions. Additionally, they often reduce the reliance on non-renewable resources like cement and bitumen, aligning with global sustainability goals. Another noteworthy trend is the application of advanced soil testing and monitoring technologies, including remote sensing, geospatial analysis, and real-time data collection. These techniques enable engineers to assess soil conditions accurately, detect potential issues early, and optimize stabilization methods accordingly. The integration of artificial intelligence and machine learning further enhances decision-making processes and reduces construction risks. Furthermore, sustainability concerns have driven the adoption of eco-friendly stabilization methods, such as bio-based soil stabilizers and recycled materials.

Keywords: Soil stabilization, Road construction, Sustainability, Binder additives, Geopolymers, Nanomaterials, Soil testing, Remote sensing, Geospatial analysis



FIBROSIS MICROGRAPHS: TEXTURE ANALYSIS

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Abstract:

Computer-aided diagnostics (CAD) are procedures that provide a great deal of information to aid clinicians in comprehending medical images, hence increasing the consistency and accuracy of medical diagnosis and reducing the time required to read an image using conventional techniques. The algorithms used in computer-aided diagnosis are crucial for the early diagnosis of various diseases and also support radiotherapists in their operations involving medical decision-making. It comes with features that evaluate acquired data automatically, diagnose patients and tissues automatically, and locate questionable spots in images. In this study, we examine several classifiers and use digital image processing to identify fibrosis in microscopic pictures.

Keywords: Image segmentation, feature extraction, classification, CAD system, fibrosis, and texture analysis

Introduction:

Nearly all patients with chronic liver damage develop fibrosis, a reversible scarring reaction. Hepatic fibrosis eventually progresses to cirrhosis, which is characterised by nodule formation and organ contraction. Virtually all of the side effects of end-stage liver disorders, such as portal hypertension, ascites, encephalopathy, synthetic malfunction, and reduced metabolic capacity, are caused by the fibrotic reaction. Hepatic fibrosis is a reaction to a number of chronic liver diseases, such as alcoholism, medication and chemical toxicity, and viral infection. A common xenobiotic used to cause oxidative stress is carbon tetrachloride (CCl₄). Rats are commonly employed as an experimental model for hepatic fibrosis under chronic CCl₄ therapy [1–3].

The primary characteristic of liver fibrosis is unchecked collagen I synthesis [4]. Hepatic stellate cells (HSCs) change into activated collagen-producing cells in response to a fibrogenic stimulus, such as alcohol. Even though other mesenchymal cells may also play roles, HSCs unquestionably serve the primary function in the excessive synthesis and storage of extracellular matrix (ECM) in liver fibrosis [5]. Several ECM components, such as collagen types I and III and a-smooth muscle actin, are produced by HSCs (a-SMA) [6].

Due to the production of free radicals, CCl₄ damages the liver both acutely and over time [7–10]. By way of P450-dependent dehalogenation, CCl₄ is converted to the trichloromethyl radical, which perturbs cellular metabolism and changes membrane proteins and lipids by covalent attachment to cellular macromolecules. There is an animal model for hepatic failure using CCl₄

Advances in Machine Condition Monitoring and Fault Diagnosis Techniques

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Abstract:

Machine condition monitoring and fault diagnosis play crucial roles in ensuring the reliability, safety, and efficiency of mechanical systems across various industries. With the rapid advancements in sensor technology, data analytics, and machine learning algorithms, significant progress has been made in the field of machine condition monitoring and fault diagnosis techniques. Traditional methods such as vibration analysis, oil analysis, and thermography have been enhanced with the integration of wireless sensors, Internet of Things (IoT) devices, and cloud computing. These advancements have facilitated real-time monitoring of various parameters, including vibration, temperature, pressure, and lubricant condition. Moreover, the emergence of smart sensors and edge computing enables on-site data processing, reducing latency and improving response time for critical applications. Machine learning algorithms, particularly deep learning and artificial neural networks, have shown remarkable performance in fault diagnosis tasks. These techniques have the capability to automatically learn complex patterns from large-scale sensor data and accurately classify different fault types. Additionally, ensemble methods, hybrid models, and transfer learning have been explored to improve fault diagnosis accuracy and robustness. The integration of machine condition monitoring and fault diagnosis systems with digital twins has gained attention. Digital twins provide virtual replicas of physical systems, enabling real-time monitoring, simulation, and predictive maintenance. By combining sensor data with physics-based models and data-driven approaches, digital twins enhance the understanding of system behavior, enabling proactive maintenance strategies and reducing downtime.

Keywords:

Machine condition monitoring, Fault diagnosis techniques, Mechanical systems, Sensor technology, Data analytics, Machine learning algorithms, Vibration analysis

Introduction:

In modern industries, the efficient operation of mechanical systems is of paramount importance to ensure productivity, safety, and cost-effectiveness. Machine condition monitoring and fault diagnosis techniques have emerged as crucial tools for identifying potential issues in mechanical systems, allowing proactive maintenance and reducing the risk of unexpected failures. With the rapid advancement of sensor technology, data analytics, and machine learning algorithms, the field of machine condition monitoring and fault diagnosis has witnessed significant progress in recent years [1]. Mechanical systems are found in diverse applications, ranging from manufacturing plants, power generation, transportation, to aerospace and beyond. These systems often operate under demanding conditions, subjected to varying loads, temperatures, and environmental factors. Consequently, their components are susceptible to wear, fatigue, and degradation over time. Detecting the early signs of potential faults or abnormalities in these systems is vital to prevent catastrophic failures that could lead to costly downtime, safety hazards, and even environmental damage. Usually, machine condition monitoring relied on periodic inspections and manual data collection through techniques such as vibration analysis, oil analysis, and thermography. While effective to some extent, these



CLIMATE CRISIS IN INDIA

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Abstract:

There is no denying in saying that India is heating up. You can see the effects of rising temperatures everywhere you look as the climate crisis disrupts our daily lives and critical sectors like our energy, agriculture and transportation system. The process of global warming has led to an increase in the frequency and intensity of these climatic disasters. With the increasing trends of global warming, predictions of severer climatic events have been made for India. The anticipated increase in precipitation, the melting of glaciers and expanding seas are projected to influence the Indian climate particularly severely, with an increase in incidence of floods, hurricanes, and storms. Global warming is also posing as a mammoth threat to the foods security situation in India with recurring and severe droughts and ravaging floods engulfing the arable land. Rising Temperatures on the Tibetan Plateau are causing the melting of the Himalayan glaciers, reducing the water flow in the rivers Ganges, Brahmaputra, Yamuna, and other major rivers, on which the livelihoods of hundreds of thousands of farmers depend. . Unprecedented floods take place every year at one place or the other, with the most vulnerable states of India being Uttar Pradesh, Bihar, Assam, West Bengal, Gujarat, Orissa, Andhra Pradesh, Madhya Pradesh, Maharashtra, Punjab and Jammu & Kashmir. The climatic history of India is studded with a very large number of floods, which affects the country's economy. Also Cyclones have been observed to be more frequent in the Bay of Bengal than the Arabian Sea.

Keywords: Climate Changes, Global Warming, Floods, Cyclones, Natural Disasters

Introduction:

India exhibits a wide diversity of temperatures; from the freezing cold winters in the Himalayas to the scorching heat of the Thar Desert. The above two regions play a very significant role in controlling the weather of India, making it warmer than to be expected with its latitude. The Himalayas participate in this warming by preventing the cold winds from blowing in, and the Thar desert attracts the summer monsoon winds, which are responsible for making the majority of the monsoon season of India. However, the majority of the regions can be considered climatically tropical. The Indian economy is considered as one of the fastest growing major economies. However, the country is plagued by the climatic disasters that continue to affect its economy. As a result, in spite of the leaping economical progress, the majority of the people of India continue to live in poverty, with malnutrition and diseases corroding the society. India could lose as much as 9% of its GDP, largely from events like submergence of low-lying coastal areas. A report by



An Overview of Insider Trading in India

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Abstract:

The quality and integrity of the market have a significant impact on the efficient operation of the securities market as well as its health, growth, and development. Such a market is the only one that has the potential to inspire investors' trust, which rests on the knowledge that the market can support them, will treat them fairly, and will guard them from improper use of insider information. Insider trading and other unfair business practises can have an impact on the securities market's efficiency, fairness, and integrity, as well as investors' confidence. Therefore, the Securities and Exchange Board of India (also known as SEBI) was established in India to safeguard the interests of investors in securities as well as to encourage the growth and regulation of the securities market. SEBI was also given the authority to issue regulations by notification in accordance with the SEBI Act, which was passed in 1992. In accordance with these principles, the SEBI established the SEBI (Prohibition of Insider Trading) Regulations, 1992 (the "1992 regulations"). These regulations have since been repealed, and the SEBI (Prohibition of Insider Trading) Regulations, 2015 (the "2015 regulations") have taken effect. These regulations are intended to address the shortcomings of the previous regulations and to combat the threat of insider trading, which is an illegal strategy used by some vested interests in the corporate sector to further their own. This study reviews the insider trading and its impact on the securities market in India and some suggestions to curb illegal insider trading in India.

Keywords:

Insider trading, Capital markets, SEBI.

Introduction:

Insider trading basically refers to trading in a company's securities based on confidential company information that hasn't been made public or is otherwise unknown to the public. This type of information is referred to as "unpublished price sensitive information" and can be used to make profits or prevent losses. According to the Securities Exchange Board of India (Prohibition of Insider Trading) Regulations, this is a clear breach of officers' fiduciary duties. By virtue of his job status or any other type of connection, the insider deals in shares of a firm to generate unjustifiable gains. By doing this, the fundamental idea of fair and free transferability of shares, which is not achieved on the capital market, is portrayed. The main motivation for the creation of these

AN ANALYSIS OF COMPUTER VIRUSES

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Abstract:

We are all familiar with the term "computer virus." What we do know is that it is a virus that affects computer systems, but we are unsure of how it operates or how it impacts our computers, sometimes even the hard drives, and occasionally even stealing data from our systems to send to other parties. A computer virus is a piece of software that attaches to another programme and has an unauthorized impact on it. According to the results of the survey that was provided, viruses can infect computer systems in a variety of methods, including the exchange of flash drives, hard drives, and network medium. The reader of this essay can assess the threat that computer viruses pose thanks to the overview of the virus provided in this document. It offers an abstract overview of the prevention and detection of computer viruses. The most important aspect of a computer is viruses. The majority of computer users worldwide are vulnerable to this threat, and it is highly challenging to guard against virus infection on every computer. Viruses replicate and propagate from one machine to another and from one network to another.

Keywords: Computer virus, Malware, Attacks, Control methods

Introduction:

The first computer virus, called "Creeper system", was beginning of self-replicating virus released in 1971. Its working was like it take up the hard drive until a computer could not operate any further. The first computer virus for MS-DOS was "Brain" and was liberated in 1986. It would duplicate the boot sector on the floppy disk and prevent the computer from booting. It was written by two brothers from Pakistan and was initially designed as a copy protection [1]. "The Morris" was the first Computer virus which spread broadly in 1988. It was written by Robert Morris, a graduate student from Cornell University who needed to determine the size of the internet. His approach used contract holes in send mail and other UNIX applications as well as weak passwords, but due to a programming mistake it spread too fast and started to interfere with the natural process of the computers. It contaminated around 15,000 computers in 15 hours, which back then was most of the internet.



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BLOCKCHAIN-BASED IDENTITY MANAGEMENT: ENHANCING SECURITY AND PRIVACY

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Abstract:

Blockchain technology has emerged as a transformative innovation with the potential to revolutionize various industries. It provides a decentralized and immutable ledger that enables secure and transparent transactions without the need for intermediaries. With the increasing digitization of personal information and the growing concerns about data breaches and identity theft, traditional identity management systems face significant challenges in providing adequate security and privacy. Blockchain technology offers a promising solution for identity management by leveraging its decentralized and transparent nature. In supply chain management, blockchain enables end-to-end traceability, reducing fraud, counterfeiting, and ensuring product authenticity. The healthcare industry benefits from blockchain's ability to securely store and share patient records, streamline medical research, and improve interoperability between healthcare providers. Blockchain-based voting systems offer enhanced transparency, immutability, and tamper resistance, strengthening the democratic process. Intellectual property management can be enhanced through blockchain by establishing proof of ownership and tracking digital assets' history.

Keywords: Blockchain technology, Identity management, Security, Privacy

Introduction:

In an increasingly digital world, where individuals rely on various online services and platforms, the management and protection of personal identities have become critical concerns. Traditional identity management systems, centered around centralized databases and authentication mechanisms, are vulnerable to data breaches, identity theft, and privacy infringements. As a result, there is a pressing need for innovative solutions that can enhance security, preserve privacy, and provide individuals with greater control over their identities. One technology that has garnered significant attention and holds the potential to revolutionize identity management is blockchain. Blockchain technology has gained



A STUDY ON CYBER SECURITY

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Abstract:

Cyber security is of the utmost importance to the information technology industry. One of the largest issues in the modern world is information security. Cybercrimes, which are on the rise daily, is the first thing that springs to mind whenever we think about cyber security. Numerous governments and businesses are taking action to stop these cybercrimes. In spite of several precautions, many people are still quite concerned about cyber security. The issues of cyber security using cutting-edge technologies are the main emphasis of this article.

Keywords: Cyber Security, Cyber Crimes, Technologies.

Introduction:

Cyber security also refers to an array of methods and techniques created to protect systems, networks, different applications, and data from cyber-attacks, damage, and illicit access [1]. Security in the context of technology encompasses both cyber and physical security. Many computer systems as well as programmers were not sufficiently secured when they were developed, which is one of the main causes of the internet. As an illustration, the Domain Name System (DNS) was not created to be 100 percent safe. Today's man can transmit and get any kind of data via email, audio, or video with the simple press of a button, but has he ever considered how securely his data has been delivered or sent to the other person without any information leaking? Cyber security holds the key to the solution. The basis of daily life that is evolving most rapidly is the internet. Many of the most recent technologies are altering the face of humanity in today's technological environment. However, because of this new technology, we are unable to effectively protect our confidential data, which is why cybercrime is on the rise right now. Today, more than 60% of all business transactions are conducted online, necessitating a high level of security in this sector to provide the most efficient and upfront operations. Thus, cyber security has emerged as a current concern. Humans must enforce rules like using encrypted passwords and refraining from sharing them, and software must be updated with security patches. Firewalls and antivirus software can aid in preventing illegitimate access to confidential information. Since that digital solutions cannot, by themselves, prohibit every offence, it is essential to give law enforcement agencies the resources they need to successfully investigate and bring charges against cybercrime. To prevent the loss of any crucial data, many countries and governments today have strong rules governing cyber security. Every person needs to receive training in cyber security to protect oneself from the UGC CARE Group-1,

**REVIEW OF MICROGRID SYSTEMS AND DISTRIBUTED ENERGY RESOURCES
INTEGRATION**

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Abstract:

With the increasing demand for reliable and sustainable energy sources, the integration of distributed energy resources (DERs) and microgrid systems has gained significant attention. There are different concept of microgrids and their role in promoting energy resilience, grid stability, and renewable energy integration. It then explores the various types of DERs that can be integrated into microgrids, including solar photovoltaics, wind turbines, energy storage systems, and demand response technologies. The review focuses on the technical aspects of microgrid operation and control strategies. It discusses the challenges related to the intermittent nature of renewable energy sources and the need for effective energy management and coordination within microgrids. Furthermore, it highlights the importance of advanced control algorithms, communication systems, and optimization techniques for achieving efficient and reliable microgrid operation. It examines the potential benefits of microgrids, such as improved energy efficiency, reduced carbon emissions, and enhanced grid resilience. The microgrid structure under consideration comprises several types of combined heat power devices, boilers, and various types of DERs, including FC units, distributed generators, and MTs. Moreover, compared to grid-connected mode, the microgrid's total operation cost is significantly higher in isolated mode. It explores the emerging trends and future prospects in the field of microgrid systems and DER integration. It investigates the integration of electric vehicles, smart grid technologies, and blockchain-based energy trading platforms within microgrids, thereby enabling new possibilities for energy management and optimization.

Keywords: Microgrid systems, Distributed energy resources (DERs), Renewable energy integration, Energy management, Control strategies, Energy storage systems, Demand response, Intermittent renewable energy, Optimization techniques.

Introduction:

In recent years, there has been a growing global interest in developing sustainable and resilient energy systems to address the challenges of climate change and the need for reliable power supply. This has led to a significant focus on microgrid systems and the integration of distributed energy resources (DERs). Microgrid systems, characterized by their localized and self-contained energy generation, distribution, and consumption capabilities, have emerged as a promising solution for enhancing energy resilience, promoting renewable energy integration, and improving grid stability. Microgrids are small-scale energy systems that can operate either in connection with or independently from the traditional centralized power grid [1]. They are capable of integrating various DERs such as solar photovoltaics, wind turbines, energy storage systems, and demand response technologies. These DERs contribute to the generation of clean and renewable energy, reducing dependency on fossil fuels and enabling a more sustainable energy mix. The integration of DERs into microgrid systems presents numerous opportunities and challenges.

THE CLIENT SERVER DATA SYNCHRONIZATION

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Abstract:

In the modern computing era, almost all devices have the ability to move easily from one place to another, and the data stored on one system can be used by other systems typically using the client-server paradigm. Mobility is one of the key features of the current computing environment. The device can download the necessary amount of data from the server and use it both online and offline, but any changes made while working offline should be copied back to the server and vice versa once the server connects. The most current data that the server has received from the client database should always be retained. Therefore, maintaining data integrity, resolving data conflicts, and putting the most recent data between the client and server all depend on data synchronisation in this case. This document includes an overview of the two devices' overall data synchronisation, as well as its architecture, tools, and procedures.

Keywords: Database, Synchronization, Client, Server, FTP.

Introduction:

Database:

An organised collection of data is called a database [2]. Usually, the facts are arranged in a way that helps the processes that demand for this information by modeling pertinent features of reality.

Database Management Systems:

The amount of data is growing daily in the digital age. If the data are kept in a database or in a structured manner, they are readily available. The management of databases and database technologies are significantly influencing the rise in computer use. Since every business module uses databases to store data, database management has been expanding quickly in recent years. A database management system (DBMS) is a software module used to access, administer, and manipulate data stored in databases. DBMS were created to manage massive amounts of data [6].

An organisation can manage its operational data with the aid of a database management system (DBMS), which is a collection of data, hardware, software, and users. A DBMS's primary purpose is to give numerous users effective and trustworthy ways to retrieve data. If our college enrolls 10,000 students a year and allows each student to keep track of around 10 grades, then after ten years, the college will have amassed 1,000,000 grade records. From such a set of records, it is difficult to isolate those that meet specific requirements, and by today's standards, this set of records is quite modest. Finding the evolution of the grade averages in beginning programming courses over a 10-year period



MATHEMATICS TEACHING AND MODELING IN INDIA VS PHILIPPINES

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Abstract:

The characteristics of the selected outstanding mathematics teachers in the Division of Valenzuela – Philippines and how cultural, social and school context contribute to being an outstanding mathematics teachers. Their pedagogical practices classified as fine effective instruction and systematically reflect on their teaching. Results indicated that the formula for model outstanding mathematics teachers is culturally bounded and the teaching of outstanding mathematics teachers is influenced by the social and cultural context and they demonstrate the ability to work against social and cultural constraints. In India when Gandhiji propounded the idea of basic education, the Zakir Husain committee was appointed to elaborate on this idea. It recommended: ‘Knowledge of mathematics is an essential part of any curriculum. Every child is expected to work out the ordinary calculations required in the course of his craft work or his personal and community concerns and activities.’ The Secondary Education Commission appointed in 1952 also emphasized the need for mathematics as a compulsory subject in the schools.

Keywords: Mathematics Teachers, learning, Pedagogical Practices.

Introduction:

Teacher's quality plays a significant role in students learning. In fact, Moir mentioned that teachers' quality as the most important school-related factor in student learning outcomes, which "dwarfs every other school-related variable including class size, school size, and even the heterogeneity of prior achievement within a classroom". Many other researchers also commented that teachers' quality is a major factor that influences the quality of education in general and students' Mathematics achievement in particular. From this point of view, even though the relationship is complicated, it is reasonable to conjecture that mathematics teachers' expertise is major factor affecting students' achievement as teachers are key to students' opportunities to learn mathematics.[2][3]

Since teachers' qualities might be a major factor in influencing students „achievement, the questions of what it means to be an outstanding mathematics teacher and what characteristics an outstanding mathematics teacher possesses are central. Therefore, teaching excellence and the concept of outstanding teacher are not universal but culturally and contextually dependent. In view of this, the present study aimed to explore how an “outstanding mathematics teacher” is conceptualized in the context of Valenzuela City. Results of the study would be important for



Numerical Analysis: Analyse Hard Problems

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Abstract:

Modern computation has provided us with the capacity to solve some tedious daily day problems that involve the use of mathematics. Numerical Analysis is one of the branching fields that are used to cope with the same. Most Mathematical problems from science and engineering are very complex and sometimes cannot be solved directly. Therefore, measuring a complex Mathematical problem is very important to make it easier to solve. Due to the great advances in computational technology, numeracy has become very popular and is a modern tool for scientists and engineers. As a result many software programs are being developed such as Matlab, Mathematica, Maple etc. the most difficult problems in an effective and simple way. These soft ware's contain functions that use standard numeric methods, in which the user can bypass the required parameters and obtain the results in a single command without knowing the numerical details.

Keywords:

Numerical Analysis, Design Problem, Applications, method, Analysis

INTENSE SENSITIVITY EFFECTS MATHEMATICS IN HIGHER STUDIES

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Abstract:

Each person who uses or reads or hears the word, interprets it in terms of his past experiences, his needs and his purposes and also according to his personal interest in and expectations of it. Learning is defined as modification of behavior through experience. It is also defined as the acquisition of a desirable behavioral pattern. In other words learning is the modification and co-ordination of the response of the organisms. This study focuses on the important psychological variables like emotional intelligence and academic achievement. Normative survey method was used for the research. In this Sample include higher class students. Stratified sampling technique was used. The statistical technique used was t test. The hypotheses state that. There will be significant correlation between mental feelings with studies for higher class students. There will not be significant difference between male and female students in their intense sensitivity. There will not be significant difference between male and female students in their studies.

Keywords: Learning, Mathematics, Sensitivity among Students, Assessment, Higher Mathematics

Introduction:

It is presumed that students who are emotionally strong can successfully manage the stressful situation that they encounter in their day to day life. Academic results are considered as key to judge one's potentialities and capabilities. The concept of education is still in the process of an evaluation and this process will never come to an end. As time passes there will be always a demand for revision of prevailing educational ideas [5]. Teachers need to understand a subject enough to convey its essence to students. While traditionally this has involved learning on the part of the teacher [1]. New institutional strategies put the teacher more in to the role of course designer, discussion and coach and students more in the role of active learners, discovering the subject of the course. In any case, the goal is to establish a sound knowledge base and skill set on which students will be able to build as they are exposed to different life experience. This study focuses on intense sensitivity and Academic outcomes in mathematics of higher school students. Intense sensitivity is the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in us and in our relationships [3]. The term academic result refers to performance in school in a standardized series of educational test [2]. The study was designed with a view to finding the relationship emotional behavior and academic results of the students. The study would help in knowing how far the higher school students differ in emotional behavior and academic results with respect to gender of the students. It is expected that the findings of the study would help the authorities to plan curricular and activities for higher school students [4].

A BRIEF RESEARCH ON THE STATUS OF NON- CONVENTIONAL SOURCES OF ENERGY IN INDIA AND VARIOUS TECHNIQUES TO GENERATE THESE RESOURCES

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Abstract:

The term "nonconventional energy" or "renewable sources of energy" refers to energy sources that are not exhaustible and are continuously produced by nature. The conventional sources include fossil fuels like coal, oil, and gas as well as certain types of atomic energy like uranium. Nonconventional sources include renewable energy like sunlight, wind, rain, tides, and heat from the sun. Many nations throughout the world are looking for and creating non-conventional energy sources that may be absolutely necessary to sustain the life cycle of a person because the event and advancement of a grouping are tightly related to energy sources. Energy usage directly relates to how far the grouping has advanced. Our country, Republic of India has additionally taken sure initiatives. In this paper, a review-based study has been given concerning numerous non-conventional energy sources and their current standing and usage in India.

Keywords: Conventional, Non- conventional Sources, energy, fuel.

Introduction:

Biomass-based renewable energy sources are the most common and are abundant in nature because they can be replaced, or regenerated, naturally over a short period of time. Renewable energy sources are never-ending; when we utilize them, they can be renewed and continue to create energy. These include things like firewood or fuel wood from forests, petrochemical plants, plant biomass in the form of agricultural wastes like bagasse, animal dung, sun, wind, and water energy, such as hydroelectricity, as well as geothermal and ocean wave and tidal energy. These can naturally replicate themselves and can be continuously harvested with consistent good planning and management. Non-renewable energy resources have a finite supply and take a longer time to develop. They are likely to run out one day due to their constant use. These include nuclear power and a variety of fossil fuels, such as coal, natural gas, and petroleum-based products. The nuclear fission of uranium and thorium is the primary source of nuclear energy. The world's supply of uranium, thorium, and fossil fuels is finite and will eventually run out. Additionally, using fossil fuels for energy has harmful effects on the environment, including air pollution, global warming, acid rain, and oil spills. Therefore, it has become crucial to reduce the use of fossil fuels and to switch to renewable sources in their place. Biomass-based renewable energy sources, which can be found in nature in an infinite supply since they can be revived or renewed. Renewable energy sources are inexhaustible, i.e., they will get replaced once we tend to use them and may turn out energy once more and once more. These embody, fuel or fuel wood obtained from forest, petro-plants, plant biomass as agricultural wastes like pulp, animal dung, alternative energy, wind energy, water energy i.e., hydro-electrical, ocean wave and recurrent event energy, and heat etc. These will reproduce themselves in nature and may be harvested unendingly through a sustained correct designing and management. Non-renewable energy resources are of employment of fossil fuels and to switch them with renewable resources. [1]

STATE-OF-THE-ART AND FUTURE DIRECTIONS: BIM (BUILDING INFORMATION MODELING)

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Abstract:

Building Information Modeling (BIM) has emerged as a transformative technology in the architecture, engineering, and construction industry, revolutionizing the way we plan, design, construct, and manage buildings and infrastructure. This abstract provides an overview of the current state-of-the-art in BIM practices, tools, and methodologies while also exploring promising future directions that hold the potential to further revolutionize the industry. The state-of-the-art section examines the key developments in BIM, highlighting its evolution from 3D modeling to a comprehensive digital representation of building projects. It discusses the integration of data-rich 3D models with other project information, emphasizing collaboration and interdisciplinary coordination. Additionally, it explores the adoption of BIM across the project lifecycle, from conceptualization and design to construction and facility management, promoting efficiency and reducing errors. It also delves into the integration of emerging technologies with BIM, such as augmented reality, virtual reality, and artificial intelligence, which enhance visualization, simulation, and decision-making processes. Furthermore, it touches upon the growing importance of sustainability and environmental considerations within BIM, with a focus on energy analysis, life-cycle assessment, and sustainable design optimization. In terms of future directions, the abstract outlines several areas of potential growth and innovation. These include the utilization of BIM in smart cities and the Internet of Things, where BIM can serve as the digital twin for urban infrastructure, enabling real-time monitoring and management.

Keywords: Building Information Modeling (BIM), AEC industry, Digital representation, Interdisciplinary coordination, Project lifecycle, Augmented reality (AR), Virtual reality (VR), Artificial intelligence (AI), Sustainability

Introduction:

Building Information Modeling (BIM) stands at the forefront of innovation within the architecture, engineering, and construction (AEC) industry reshaping how we conceptualize, design, construct, and manage the built environment. This introduction offers a glimpse into the state-of-the-art in BIM practices, tools, and methodologies while peering into the promising future directions that hold the potential to revolutionize the industry even further [1]. In the present state-of-the-art landscape, BIM has evolved from its humble beginnings as a 3D modeling tool into a comprehensive digital framework that represents a building's entire life cycle. Beyond mere visual representations, BIM encompasses a rich repository of data, from architectural and structural details to mechanical and electrical systems, fostering a holistic understanding of a project. Its fundamental principle lies in collaboration, bringing together diverse stakeholders to work in unison through interoperable platforms, thus reducing errors and enhancing efficiency. The modern BIM ecosystem also harnesses the power of emerging

ADVANCEMENTS IN SUSTAINABLE BUILDING MATERIALS AND TECHNOLOGIES**Harish Sharma¹ Tarandeep Singh²**

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Abstract:

The global construction industry is undergoing a transformative shift towards sustainability, driven by the urgent need to mitigate environmental impacts and create more resilient built environments. This abstract presents a comprehensive overview of recent advancements in sustainable building materials and technologies that are shaping the future of construction. Sustainable building materials characterized by their low environmental footprint and enhanced performance, have gained increasing prominence in contemporary construction practices. Innovations in this domain include the development of bio-based materials, such as engineered wood products and biodegradable composites, which reduce reliance on traditional, resource-intensive materials like concrete and steel. Additionally, the integration of recycled and reclaimed materials, such as recycled plastics and salvaged wood, has gained traction, further reducing waste and carbon emissions. Technological advancements play a pivotal role in enhancing the sustainability of building processes and operations. Building Information Modeling (BIM) and Digital Twin technologies enable more efficient resource management, streamline design and construction workflows, and improve building performance monitoring and maintenance. Furthermore, the adoption of smart building systems and Internet of Things (IoT) devices optimizes energy consumption, enhances occupant comfort, and reduces operational costs. Energy efficiency remains a central focus in sustainable construction, with developments in high-performance insulation materials, advanced glazing solutions, and renewable energy integration.

Keywords: Sustainable building materials, Eco-friendly construction, Green building technologies, Energy-efficient construction, Building Information Modeling (BIM), Digital Twin technology, Smart building systems

Introduction:

The field of construction is experiencing a profound transformation, compelled by the urgent global imperative to address environmental concerns and create more sustainable built environments. The concept of sustainability in construction extends beyond mere buzzwords; it represents a fundamental shift in the way we design, build, and operate structures. This introduction serves as a gateway to the exploration of "Advancements in Sustainable Building Materials and Technologies," a dynamic landscape where innovation converges with environmental responsibility to shape the future of the construction industry [1]. The conventional construction practices of the past, reliant on resource-intensive materials like concrete and steel, have given way to a new era characterized by sustainability at its core. This paradigm shift is underpinned by the development and integration of sustainable building materials and cutting-edge technologies that minimize environmental impact, optimize resource utilization, and enhance overall building performance. In this era of sustainability, builders and designers are increasingly embracing bio-based materials, recycled and reclaimed resources, and

SEISMIC DESIGN EVALUATION OF REINFORCED CONCRETE BUILDING

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Abstract:

Seismic design evaluation of reinforced concrete buildings is a critical aspect of ensuring structural integrity and occupant safety in regions prone to seismic activity. This abstract provides an overview of the key considerations and methodologies involved in assessing the seismic performance of such structures. The seismic performance of reinforced concrete buildings is contingent upon various factors, including architectural design, material properties, construction quality, and the seismic hazard characteristics of the region. This evaluation encompasses a multidisciplinary approach that combines structural engineering principles, geotechnical analysis, and seismology to develop resilient building designs. This abstract highlights the primary stages of seismic design evaluation, starting with seismic hazard assessment, where the ground motion characteristics are determined. Subsequently, structural engineers conduct dynamic analysis and nonlinear modeling to predict how the building will respond to different levels of seismic forces. Performance-based design criteria are utilized to quantify the building's ability to withstand seismic loading and to ensure that structural damage is minimized while preserving life safety. Advanced analysis techniques, such as pushover analysis and time-history analysis, are employed to evaluate the nonlinear behavior of reinforced concrete structures under seismic loads. Seismic retrofitting techniques may also be recommended for existing buildings to enhance their seismic performance. Furthermore, the abstract emphasizes the importance of integrating innovative materials and construction techniques, such as base isolators and energy dissipation devices, into the seismic design process. These technologies enhance the resilience of reinforced concrete buildings by dissipating and absorbing seismic energy, reducing structural damage and protecting occupants.

Keywords: Seismic design, Reinforced concrete, Building evaluation, Seismic hazard assessment, Structural engineering, Multidisciplinary approach, Geotechnical analysis, Non-linear modeling, Dynamic analysis

Introduction:



A Digitalized Banking Sector

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Abstract:

Customer preferences and demands have changed as a result of the influence that digitalization has played in the banking industry. Knowing how digitizations have affected e-banking services is the study's primary goal. The bank has often had a one-to-one relationship with each of its clients. Curiosity has prompted the Indian government to take a number of actions to modernize the country's banking industry. The introduction of debit cards, credit cards, NEFT, RTGS, Jan Dhanyojana, White label ATMs, mobile banking, online banking, and many other significant measures to improve banking in India have received positive feedback from customers. The organizations (service providers) can increase their company performance and maintain their competitiveness with the aid of these diverse digital solutions. In order to boost their profitability, strengthen financial position, and enhance performance, they also help to increase market share. They all point out that despite the recent ten years of rapid technological improvement, academic literature hasn't given Digital Financial Services, a factor affecting the performance of the organization, the appropriate amount of attention. A growing number of people are using and accessing the financial services offered by banks thanks to developing new technologies like app banking and mobile wallets. The impact of digital technology on financial situation in relation to the Indian economy and culture is discussed in this paper.

ANALYTICAL AND NUMERICAL SOLUTIONS FOR THE EFFECT OF SEEPAGE ON THE BEARING CAPACITY OF ROCK MASSES

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Abstract:

To determine the bearing capacity of rock masses subjected to seepage, the upper bound approach uses a multi-wedge non-symmetrical failure mechanism. The gradient ratio, a non-dimensional quantity, accounts for the impact of seepage. The created upper bound formulation is contrasted with the options accessible for media made of soil and rock. Additionally, for a gravity dam foundation subject to seepage, three-dimensional finite element models were built, and the bearing capacity of the nearby rock mass was determined. The results of the upper bound solution reported in this work and those of the numerical models exhibit good agreement when compared. Compared to other upper bound formulations that are currently accessible in this field, the upper bound solution that is offered is more effective. The obtained results demonstrate that the ultimate bearing capacity is reduced by 17 to 23% for a gradient ratio increase from zero to 0.3. The findings of the 3D numerical calculations and the M3 mechanism can only deviate by a maximum of 8%.

Keywords: Rock mass, bearing capacity, Upper bound, Seepage, Hoek–Brown, Failure mechanism

Introduction:

Natural disasters like earthquakes and floods cause impulsive loads and seepages in the ground that put civil engineering projects in jeopardy. Infrastructures must be constructed to withstand natural hazards while maintaining acceptable levels of safety and economic viability. To ensure the sustainability of the infrastructures, it is therefore highly recommended to use an optimised design that accurately takes into account the detrimental effects that these natural phenomena introduce to the foundations [1]. Appreciating the bearing capacity, which was the focus of numerous studies in the area of soil mechanics, is a necessary step in the design process of footings. However, compared to soils, the carrying capacity of rock masses receives far less attention. The following general version of the bearing capacity equation was established by many researchers who researched the ultimate bearing capacity of rock masses [3-5]

$$q_u = \sqrt{s}\sigma_{ci}N_{\sigma} + q_0N_q + \frac{1}{2}\gamma BN_r,$$

Where s is a constant parameter of Hoek–Brown failure criterion, σ_{ci} is the uniaxial compressive strength of the intact rock, q_0 is the surcharge, c is the unit weight of the rock mass, B is the foundation width and N_r , N_q and N_c are the bearing capacity factors [2].

While the effects of an earthquake are taken into account while estimating bearing capacity, it is customary to employ the pseudo-static hypothesis, which states that the seismic force operates as an additional body force within the soil mass. On the ground and inside the structure, the vertical and horizontal acceleration are both applied. Thus, by adding pseudo-static equivalent forces that correspond to the inertial forces in the soil during the seismic excitation, the limit conditions can be assessed. Such



THE REMEDIATION OF SOILS AND GROUNDWATER THAT CONTAIN CONTAMINANTS

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Abstract:

Stabilised nanoparticles have been researched for nearly two decades for in situ treatment of soil and groundwater contaminated with organic contaminants due to better soil deliverability and high reactivity. Despite the fact that a substantial amount of bench- and field-scale experimental evidence has shown the Innovative technology and thorough research have also revealed a number of benefits and drawbacks related to specific soil conditions, kinds of nanoparticles, and particle stabilisation strategies. The overall goal of this study is to provide a critical review of the basic concepts underlying particle stabilisation, as well as the evolution and some recent advancements in stabilised nanoparticles for the oxidation of organic pollutants in soil and groundwater. The specific goals are to recognise the knowledge gaps and future research requirements in relation to stabilised nanoparticles for groundwater and soil remediation. This review is centred on contributions by our group, one of the pioneers in the field, in accordance with the guidelines of this invited special issue, although it is reinforced by significant relevant publications by other authors. The new information is anticipated to boost research and technology in stabilised nanoparticle applications in the environment.

Keywords: Remediation, soil, groundwater, aquifer, contamination, hazardous materials

Introduction:

In many places of the world, groundwater is an essential supply of drinking water. For instance, groundwater supplies one-third of England's potable water supply and accounts for 18% of China's yearly total water usage (610 billion m³) [5]. However, because of the recent fast industrialization and urbanisation, a significant amount of soil and groundwater have become contaminated with both old and new organic compounds. For instance, in China, where environmental pollution is rife, 80% or more of the shallow groundwater that can be extracted has been discovered to be contaminated [6].

There is a significant potential risk to human health and the environment when pollutants are present in soils and groundwater at quantities exceeding background values. Numerous volatile hydrocarbons found in fuels, such as benzene, toluene, ethylene, and xylene (BTEX compounds), heavy paraffins, chlorinated organic



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THE MODERN COMPUTER NETWORK: AN OVERVIEW

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Abstract:

Computer networks are groups of connected computers that are used to transfer digital data. The concept of a network was originally established when a computer at the Massachusetts Institute of Technology was connected to another server in Santa Monica, California. Since that time, both the number of computers and computer networks has significantly increased. One of the main issues with networks is resource attacks brought on by inadequate network security. In this research study, we underline and give an overview of the computer network concept.

Keywords: Computer Networks, LAN, MAN, WAN

Introduction:

A group of devices, often known as nodes, make up a network [1]. A node is any device that can send and/or receive data from other nodes on the network, such as a computer, printer, or other hardware. Communication between two or more programmes running on physically separate machines is improved via networking. Communication channels are the connections between the devices. Distributed processing via a network. In the communication medium, a collection of computers communicating information politely is referred to as a protocol.

In order for computers to share data or equipment like hard drives, CD-ROMs, fax modems, printers, etc., they must be physically connected by wires. A network is shown in Fig. 1 as an example.



PANDEMIC CONSEQUENCES ON EMPLOYEES IN INDIA

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Abstract:

The devastating impact of this epidemic on businesses is yet to be ascertained but if the screaming escape of workers from cities to villages due to job losses were of any indicator, the situation continues to be grim. Companies are faced with the problems of not only labor migration but how to revive the operations and restore the logistics and supply chain management. Falling demand due to job losses has further added fuel to fire. In nutshell, the businesses are struggling to survive while the national and global economy is staring at the prospect of a historical downfall. It couldn't organize their travel to hometown and return to the workplace, including any modality of payment of advance wages/continued wages/ reduced wages/survival wages. HR, in the brutal terms, inflicted a crude blow to the well-being of the workforce.

Keywords: Covid -19, Employees, Salary, Flexible Working Hours.

Introduction:

The businesses undergoing total lock-down to arrest the spiraling of the infectious disease. Continued shut down resulted in the complete Cessation of business activities. The situation further led to an indefinite closure of workplaces and consequent layoffs, retrenchments and downsizing began. This was followed by mass exodus of workers to their home towns. No precedents, no strategies, no preparations. The corporate policy of employee well-being couldn't withstand the magnitude of the onslaught of the pandemic. HR department came under severe criticism for its unpreparedness to handle the situation. Almost entire planet was engulfed due to sudden and wild spread of the COVID-19 pandemic. A state of utter confusion prevailed at workplaces. Environment was filled with unfiltered, unsubstantiated, pseudo-facts and narratives. Situation continued worsening day by day. Social and economic fabric across borders suffered most. Post cessation of the first wave, workers began returning to their workplaces. However, soon the second wave of COVID-19 started. COVID-19 cases started rising exponentially. Entire workforce found it suddenly trapped as cessation of industrial activities had to be undertaken again to contain further spread of pandemic. Human Capital Department failed to rescue its workers from the natural calamity inflicted by the pandemic. Workers hit by the second wave of the pandemic were drained out physically and financially both. The workers families who lost their sole breadwinners during the pandemic, suffered most.



NEW TRENDS HELPS IN DEVELOPING INDIAN BANKING SYSTEM

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Abstract:

Nowadays majority of the customers are using electronic modes to do their banking transactions. E-Banking concept is a gift to the banking field. This concept was very successful in the banking era. Customers prefer e-banking due to the factor of convenience, accuracy, tangibility, reliability, customer loyalty and availability. The banking sector in India has seen a number of changes. And to meet the challenges of changing needs and perceptions of customers, new regulations over the years and great advances in technologies, most of the banks have begun to take an innovative approach towards banking with the objective of creating more value for customers in the banks. Today we have electronic payment system along with currency notes. India's financial sector is moving towards a scenario, where it can have new instruments along with liquidity and safety. Arrival of card, introduction of Electronic Clearing Service (ECS) in late 1990's, introduction of Electronic Funds Transfers, Real Time Gross Settlement (RTGS), introduction of NEFT (National Electronic Funds Transfer), mobile banking, online banking are the various innovations in banking. Banks are investing heavily in adoption of these innovations.

Keywords: New trends, Customer Satisfaction, E Banking, Cards System

Introduction:

Indian Banking Sector has witnessed a number of changes. In the 1990s, the banking sector in India saw greater emphasis being placed on technology and innovation. Banks began to use technology to provide better quality of services at greater speed. Internet banking and mobile banking made it convenient for customers to do their banking from geographically diverse places. E-banking means doing financial activities through electronic modes. It is a newly wide spread Avatar over the world. In today's competitive environment customers do not have enough time to visit the banks. So they prefer electronic gazettes to do their banking transactions. E-banking includes ATM, credit card, Mobile banking, Internet banking, SMS banking, RTGS, NEFT, IMPS and so on. Hence the bank employees need to provide good services to the customers. Or else customers will move on to other banks, where they get better services. Customer satisfaction is a very important concept which the bank has to keep in mind. Now all the banks have started with the concept of multi- channels, like ATMs, credit cards, debit cards, telephone/mobile banking, internet banking, call centers, etc [3]. The role of banking is redefined from a mere financial intermediary to service provider of various financial services under one roof acting like a financial supermarket. Intense competition among the banks has redefined the concept of the entire banking



An Innovative Robotics Era: Review

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Abstract:

Everyone is aware of how the market for artificial intelligence is expanding and becoming entirely dependent on it to complete difficult tasks. The most well-known area of engineering and science is robotics, where every scientist and engineer is eager to create a robot that can carry out a certain duty and produce the intended outcomes. Every engineer strives to create a robot that has 0% mistake, yet as technology advances, this is virtually unattainable. We can consider that, but 0% does not imply that there won't be any room for error; rather, it simply indicates that you will receive the response that is without a doubt right to every inquiry. This paper will suffice to provide readers with sufficient knowledge of robotics and devices, as well as the robot system, by demonstrating how each one is used and how it functions.

Keywords:

Robotics, Robots, Human

Introduction:

Robots are human-like objects that are capable of performing all human tasks in a fraction of the time. While they cannot fully replace people, they can assist them in carrying out many of their daily tasks. Robots are human machines that are also applications of artificial intelligence and sensors put together. In the field of science and computer applications, robots have a wide range of uses. Engineers and scientists are developing robots to the point where they are virtually universally applicable. . There are many robots that are similar to humans in that they can talk and walk without the assistance of a human thanks to programmable language input into them at the time of manufacturing. However, there are also some robots that are semi-automated, such as the needle remote for the controllability of its functioning. Every young person enjoys and wants to learn about robotics because it is one of the most popular and