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MESSAGE FROM SECRETARY

I congratulate and convey my best wishes to the HOD and faculty members of the Department of Computer Science (SF) for conducting the **Second National Conference on Sustainable Computing and Development (NCSCD-2024) on 2nd February 2024**.

The conference is conducted to provide a platform for the academicians, industrialist, researchers, and students to interact and share their pioneering ideas in research works in the field of Sustainable Computing. I wish them all success in their endeavours and extend my felicitations for the successful conduct of the conference in a grand manner.

I congratulate the organizing team and wish the organizers to conduct much more international events in the near future.

MESSAGE FROM PRINCIPAL

It gives me profound contentment to concede the **Second National Conference on Sustainable Computing and Development (NCSCD-2024)**, organized by the Department of Computer Science (SF), scheduled on February 2, 2024.

Recognizing the critical importance of balancing societal, economic, and environmental resources for the future well-being of humanity, the field of computational sustainability has gained unparalleled significance in today's landscape. This conference is envisioned as a pivotal platform, catering to professionals and academics alike, providing an opportunity to explore and discuss the latest trends in Sustainable Computing.

The objective of this conference is to propel the boundaries of sustainable computing by bringing together bright minds from various sectors. It aims to create a forum where professionals, academicians, researchers, and students can engage in insightful discussions, exchanging knowledge and expertise.

I bestow my sincere appreciation to the conscientious members of the Conference Organizing Committee and the students whose influx has played a vital role in the successful organization of this event. I am optimistic that the "**Second National Conference on Sustainable Computing and Development - 2024**" will be a rewarding and thought-provoking experience.

I extend a generous welcome to all participants of **NCSCD-2024**. May this conference not only challenge and inspire you but also foster the creation of new knowledge, collaborations, and lasting friendships.

MESSAGE FROM VICE-PRINCIPAL

I am immensely happy that Department of Computer Science (SF) is organizing a **Second National Conference on Sustainable Computing and Development (NCSCD-2024) on 2nd February 2024.**

It provides a fruitful environment for researchers, academicians and industrialist to develop the sustainable computing skills and apply them to real time problems. It is the high profile platform forthe exchange of information and insights among the leading edge and to support the formulation of sustainable development in computing.

Congratulations to the vibrant team of faculty members for their endeavour in organizing this National Conference. I extend my best wishes to all the active participants of this Conference.

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REVIEW ON THE AUTOMATIC IDENTIFICATION OF BLOOD CANCER IN MICROSCOPIC IMAGES

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Abstract

Blood, bone marrow, or lymphatic systems are the primary targets of blood cancer. A blood test is used for diagnosing it, and hematologists count the white blood cells in the sample. This process takes a long time, is tedious and typically results in a delayed diagnosis. Therefore, in order to overcome the shortcomings of the human review process and enable early and quick identification, automatic detection is necessary. This paper offers an overview of the several automatic blood cancer detection systems that have been created with the aid of image processing techniques.

S.No: 2 **PAPER ID : NCSCD24002**

GREEN COMPUTING FOR SUSTAINABLE FUTURE

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Abstract

In the world of green computing, green computing would highlight the significance of environmentally conscious computing practices. It could touch upon the need to address the environmental impact of computing technologies, emphasizing energy efficiency, waste reduction, and sustainable resource usage. The abstract might also mention the role of emerging technologies and innovative strategies in promoting a more eco-friendly approach to computing, contributing to a sustainable future.

S.No: 3 **PAPER ID : NCSCD24003**

A REVIEW OF ARTIFICIAL INTELLIGENCE (AI) APPLICATIONS IN HEALTHCARE

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Abstract

Artificial intelligence (AI) is transforming and bolstering contemporary healthcare through technologies that can grasp, anticipate, learn, and respond. Examples of AI applications include the discovery of novel genetic code relationships and the management of surgical assistance robots. It is capable of picking up on minute patterns that people would completely miss. The numerous contemporary uses of AI in the healthcare industry are examined and discussed in this paper. The study focuses in particular on the three newest and most promising areas of AI- powered healthcare: patient care, clinical trials, and AI-led drug discovery. The results imply that pharmaceutical companies have profited from artificial intelligence in healthcare by using it to expedite drug discovery and automate target identification. Time-consuming data monitoring techniques can also be eliminated with the aid of artificial intelligence (AI). The results also show that large amounts of data can be handled and extremely accurate results can be obtained by AI-assisted clinical trials. Businesses that specialize in medical AI create tools that support patients in all ways. Clinical intelligence also analyzes the medical data of patients, offering them insights to help them live better lives.

Keywords

Artificial intelligence, AI-led ,drug discovery, AI-assisted clinical trials, patients care.

S.No: 4 **PAPER ID : NCSCD24001**

AI FOR SMART ENVIRONMENT

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Abstract

The "AI for Smart Environment" abstract offers a comprehensive analysis of the vast field of artificial intelligence (AI) and its revolutionary influence on the design and administration of intelligent and sustainable living spaces. This extensive research includes a careful examination of the complex relationship that exists between AI technology and the intricacies present in contemporary ecosystems. The study starts off by giving a comprehensive summary of the core ideas and developments in AI that support its use in creating intelligent surroundings. It explores the wide range of AI techniques, such as deep learning and machine learning, and clarifies how they can be used to maximize resource efficiency, energy sustainability, and environmental sustainability. This research broadens its scope to encompass a number of industries, including waste management, transportation, and urban planning, providing a comprehensive understanding of the diverse uses of artificial intelligence. The abstract also explores the nuances of AI-enabled predictive modeling, highlighting the technology's capacity to anticipate and react to changing environmental conditions in order to support proactive decision-making. Artificial intelligence (AI)-powered real-time monitoring systems are investigated as key instruments for delivering data-driven insights into environmental conditions, promoting resilience and flexibility in smart places. This thorough investigation places a strong emphasis on ethical issues while analyzing the socioeconomic and environmental effects of incorporating AI into smart surroundings. It emphasizes how crucial it is to create responsible AI frameworks that put community well-being first and are in line with sustainable development objectives. In order to promote egalitarian and inclusive smart environments, the abstract highlights the necessity for a balanced strategy that not only tackles ethical problems but also utilizes the revolutionary potential of AI.

S.No: 5 **PAPER ID :NCSCD24006**

ENHANCED PREDICTIVE MODELING IN SOCIAL MEDIA INFLUENCE MAXIMIZATION

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Abstract

Social recommendation systems are critical in directing users to appropriate material, goods, and relationships in the age of digital connectedness. This study starts by delving into the theoretical underpinnings of homophily and influence, providing insights into their psychological bases and societal significance. It then discusses how these phenomena present themselves in various online communities, such as social networking sites, marketplaces, and discussion boards

Social Homophily and Influence Predictive modeling for Social Recommendation is a vital tool in various fields, aiding in decision-making and forecasting future trends. This research delves into an innovative approach that combines biased clustering and feature selection techniques to enhance the accuracy and relevance of predictive models. The methodology unfolds in two pivotal steps. In this research we use three types of datasets are Facebook, Instagram, Youtube for Predictive modeling. After dataset collection data preprocessing is executed using a novel adaptation of the Biased Renovate K-Means Clustering. After data preprocessing we use Biased Bat Algorithm with an Improved Extra Tree Classifier for feature selection. This approach integrates the ability of met heuristic optimization (Biased Bat Algorithm) with a robust feature evaluation technique (Improved Extra Tree Classifier).

Keywords

Biased Clustering, Biased Bat Algorithm**,** Feature Selection**,** Improved Extra Tree Classifier Renovate K-Means Clustering

S.No: 6 **PAPER ID : NCSCD24007**

AN INVESTIGATION INTO ARTIFICIAL INTELLIGENCE FOR SMART ENVIRONMENT MONITORING

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Abstract

Significant advancements have been made in wireless networking. These advancements have given rise to new wireless networking and communications paradigms. In recent times, environmental protection has evolved into a more sophisticated and integrated system that encompasses all aspects of a global city. Machine learning (ML) techniques can be used to increase an application's knowledge and proficiency in light of the growing volume of data being collected. The amount of data that is accessible grows along with the numbers and technological advancements. The foundation for the emergence of intelligent Internet of Things (IoT) apps is the intelligent gathering and analysis of these Big Data. This paper identifies the many machine learning techniques that address data challenges in smart cities. Applications that really affect the environment are discussed, including air quality, water pollution, radiation pollution, smart buildings, smart transportation, etc. Sufficient oversight is necessary to guarantee global expansion while preserving a robust community. The possibilities and difficulties, in particular, of machine learning technology's application to big data analytics and the Internet of Things

Keywords:
Machine Learning, Internet of Things, Big data

S.No: 7 **PAPER ID : NCSCD24008**

DATA SECURITY AND PRIVACY PROTECTION FOR SECURED CLOUD ENVIRONMENT

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Abstract

Cloud storage has become one of the most convenient and efficient methods to store data online. Many users have become completely reliant on cloud service providers without regard to the safety of their data. Encryption, the foundation of data protection for reliable and secure cloud environments comes at a high cost as data size increases, presenting an obstacle to provision of big data security. Hence, this paper brings forth a structural framework to secure the cloud data using MapReduce that can work wonders in enhancement of encryption and parameter tuning. In addition, it enhances less time consumption of encryption that automatically results in minimal usage of system resources. The current research tries to meet the benefits appreciated through MapReduce-based secured encryption computation.

Keywords

Cryptography, Encryption Cloud infrastructure, MapReduce, Large data security

S.No: 8 **PAPER ID : NCSCD24010**

DATA STRUCTURES: THE BUILDING BLOCKS OF MODERN COMPUTING

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Abstract

Data structures play a crucial role in various areas of recent technology, including AI, data mining, cloud computing, blockchain, cybersecurity, and machine learning. Data structures serve as the backbone of modern computing, providing the organizational framework for efficient data management and algorithmic processing. This article aims to elucidate the advanced data structures are used in modern computing involves recognizing their specific strengths and characteristics. The selection of a particular data structure depends on the requirements of the application, the types of operations that need to be performed, and the desired balance between simplicity and efficiency. These advanced data structures continue to play a crucial role in optimizing algorithms and improving the performance of various computing applications**.**

S.No: 9 **PAPER ID : NCSCD24011**

ARTIFICIAL INTELLIGENCE FOR EDUCATION AND TEACHING

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Abstract

Artificial intelligence has entered almost in all the areas of our lives. It's also a means of altering societal patterns in every area of life. Artificial intelligence exists to support the application of AI in education and to foster the growth of pedagogical and cognitive abilities. To make the teaching and learning process more effective, educators need to be more knowledgeable about common artificial intelligence products, such as sound assistance, graphics, identity, fingerprint recognition, and smart homes. Certain educators employ robotic assistants, intelligent classrooms, and other cutting-edge educational technologies to implement automatic assignment correction systems. Artificial intelligence can have a positive impact on information literacy and the workload for teachers. This is a burgeoning technology that can help accomplish educational objectives. However, it is a task that all educators should take on in order to learn about and adjust to the latest technological advancements and improve the teaching and learning process. Few teachers believe that artificial intelligence has little to nothing to do with their professional development as teachers, but even fewer acknowledge that artificial intelligence plays a crucial role in their professional development. It is appropriate.

Keywords

Artificial Intelligence, Education, pedagogical skills, cognitive skills.

S.No: 10 **PAPER ID : NCSCD24012**

REVOLUTIONIZING HEALTHCARE: A MACHINE LEARNING ODYSSEY TOWARDS ENHANCED DIAGNOSTICS, PERSONALIZED CARE, AND OPERATIONAL EXCELLENCE

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Abstract

Machine learning is a subfield of artificial intelligence (AI) that focuses on developing algorithms and statistical models that enable computer systems to improve their performance on a specific task over time without being explicitly programmed. The intersection of machine learning and healthcare has ushered in a new era of possibilities, promising unprecedented advancements in diagnostics, treatment, and patient care. This paper aims to delve into the transformative role of machine learning algorithms in shaping the landscape of modern healthcare. The presentation will commence by exploring the application of machine learning in predictive analytics for early disease diagnosis. We will showcase how predictive models, leveraging vast datasets, empower healthcare professionals to identify potential health risks at their nascent stages, thereby facilitating timely intervention and improved patient outcomes. A significant portion of the presentation will be dedicated to the realm of medical imaging analysis. Through case studies and examples, we will illustrate how machine learning algorithms are revolutionizing the interpretation of medical images, leading to more accurate and efficient diagnoses across various medical disciplines. Techniques such as image segmentation, classification, and anomaly detection will be explored, highlighting their pivotal role in enhancing diagnostic precision. The discussion will then shift towards the personalization of treatment plans, where machine learning algorithms leverage individual patient characteristics, genetic data, and treatment response patterns to tailor interventions. The concept of precision medicine will be elucidated demonstrating its potential to usher in an era of highly targeted and effective healthcare strategies. Additionally, the paper will explore the impact of machine learning on drug discovery and development, shedding light on how

algorithms expedite the identification of potential drug candidates and optimize their efficacy. We will discuss the implications of such advancements for pharmaceutical research and the potential for accelerating the pace of new drug introductions. Furthermore, the presentation will address the integral role of machine learning in healthcare management, from resource optimization within hospitals to the development of remote patient monitoring systems. Real-world applications and success stories will be presented, showcasing how these technologies are actively contributing to the improvement of healthcare operations and patient outcomes. The paper will also touch upon ethical considerations, challenges, and future directions in the integration of machine learning in healthcare. By presenting a comprehensive overview of the current state of the field, this paper aims to inspire further exploration and collaboration between machine learning and healthcare communities, fostering a future where technology and medicine work hand in hand for the betterment of global health.

Keywords

Decision tree, Naïve Bayes, Logistic Regression, SVM and Random Forest.

S.No: 11 **PAPER ID : NCSCD24014**

SUBSCRIBERS CHURN PREDICTION USING MACHINE LEARNING AND DEEP LEARNING HYBRID COST EFFECTIVE MODEL

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Abstract

Customer retention has always been significant for the customer relationship management (CRM) department of a company due to its impact on both the profits and the reputation of the company. Customer churn is one of the main factors that impede a company's growth. Chang, Wong, & Fang, (2014), it showed that increasing a company's customer retention by a few percent will improve its profit exceedingly. Their study on customer defection in different sectors, such as software and auto-service chain, showed that increasing the customer retention by 5% can increase a company's profit by 25% to 80%. There by making it necessary for the CRM department to constantly check for factors that might result in customer churn.

In many cases, the reason for customer churn is not explicitly known. However, it is possible to get more insights into the factors causing churn by verifying customer data. These days, many companies have the large customer base and the capabilities to generate huge amounts of data. Availability of huge amounts of data can provide an opportunity to verify customers who are prone to churn (Saradhi & Palshikar, 2011). Manually processing data is time consuming and hence there is need for automated machine learning methods that effectively predicts churn. When churners are successfully identified, a company can come up with offers to prevent them from discontinuing their service with the company.

S.No: 12 **PAPER ID : NCSCD24015**

TRANSFORMING ENVIRONMENTS: THE INTEGRATION OF ARTIFICIAL INTELLIGENCE FOR SMART SOLUTIONS

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Abstract

This paper investigates the transformative impact of integrating artificial intelligence (AI) into the development of smart environments, elucidating the paradigm shift across diverse domains. Focusing on sectors such as home automation, energy management, urban planning, healthcare, industrial IoT, smart agriculture, and building management systems, we delve into the profound changes AI technologies are effecting. Through a blend of concrete real-world illustrations and theoretical discourse, we shed light on the multifaceted ways in which AI is driving increased efficiency, sustainability, and an elevated quality of life in our dynamically evolving environments. By showcasing practical applications and delving into the underlying principles, the paper aims to provide a comprehensive understanding of how AI is becoming a catalyst for positive change, shaping the future of smart ecosystems. The exploration underscores the potential for AI to revolutionize and optimize diverse aspects of daily life, promising a more intelligent, interconnected, and harmonized coexistence with our surroundings.

S.No: 13 **PAPER ID : NCSCD24016**

SECURITY BASED FUZZY CONTROLLER TO ACCESS INDOOR HOME APPLIANCES WITH IOT SENSOR

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Abstract

This article presents a Security based frame work for controlling home appliances effectively with fuzzy logic using the Internet of Things (IoT). The IoT is omnipresent to supervise the physical world through sensors installed on different devices. The networks can improve many areas, including smart home because IoT Technology has the potential to secure home from threats fire, leak detection system, automatic shut off, etc. This work is aimed to provide a solution for home security that takes decision dynamically using fuzzy Logic. The SBFC comprises three main frame works: fuzzy inference framework, threat free framework and efficient energy mechanisms. Fuzzy inference system is used to allocate channels dynamically based on the current network conditions. Threat free framework designed to identify potential security of threats. Usage of less energy to perform same task to produce the same result by applying. Conversion and distribution of energy efficiency.

Keywords

Smart home, Fuzzy Logic, Internet of Things, SBFC, Fuzzy inference, threat free algorithm, efficient energy.

S.No: 14 **PAPER ID : NCSCD24017**

IOT AND SUSTAINABLE NETWORK

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Abstract

The term "Internet of Things" (IoT) describes a system of networked computing devices, objects, as well as sensors that send and receive data via various protocols and the internet. Through this network, gadgets are able to communicate with one another, exchange data, and carry out tasks either independently or with human oversight. A wide range of industries, from healthcare to transportation to manufacturing to environmental monitoring, stand to benefit from data-driven insights, robotics, as well as better decision-making made possible by the Internet of Things (IoT). Emerging as a critical facilitator for sustainable development, the Internet of Things (IoT) is already having far-reaching effects on society at large. This research aims to critically reflect on existing literature in order to investigate the relationship between the Internet of Things (IoT) and sustainability. More possibilities for the actuators in the perception layer of the IoT architecture are made possible by the ubiquitous computing capabilities made possible by IoT platforms. An increasingly important consideration in building a digital community is sustainability, as the urban population continues to rise. In this research, we provide a contemporary overview of the latest innovations in the Internet of Things (IoT) for long-term, sustainable online communities. Following a thorough review of the current literature, we focus on the many potential applications of the Internet of Things (IoT) in smart digital communities, including sustainability, smart cities, and IoT-enabled precision agriculture for environmental promotion and mitigation.

Keywords

Network sustainability, Cloud computing, smart agriculture, WSN, and green IOT.

S.No: 15 **PAPER ID : NCSCD24018**

TREE-BASED MULTI-HOP ROUTING IN WIRELESS SENSOR NETWORKS: A HYBRID MFCM-PSO METHOD USING MODIFIED FUZZY C-MEANS

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Abstract

Small sensor nodes (SNs) in a wireless sensor network (WSN) gather data from many monitoring systems. After analysis, the WSN forwards discovered data to the BS. Since SNs don't last long, the sensor network needs to collect and send data quickly. The primary challenge in sensor network organisation is energy efficiency. Energy efficiency is necessary for sensor nodes because of their high cost and small capacity. This restriction seriously the network's endurance. A node's lifetime is determined by the expected demands placed on its battery. Sensor networks need to be resistant to a decrease in sensor node lifetime. By choosing the most energy-efficient course of action, energy-efficient routing algorithms have the potential to extend the lifespan of multihop networks. Regrettably, there are performance problems with the current method. Adjusted Fuzzy C-Means Using Particle Swarm Analysis

Keywords

Wireless sensor network, clustering, routing, sensor node, direct cluster head, parent cluster head, fuzzy C-means, modified FCM, particle swarm optimization.

S.No: 16 **PAPER ID : NCSCD24019**

VIRTUAL DOMAIN AUTHENTICATION PROTOCOL FOR MAPREDUCE USING PUBLIC KEY CRYPTOGRAPHY

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Abstract

In the world of distributed computing MapReduce applications are important for processing extremely large datasets. Challenge is to make certain the security and integrity of these applications. This is solution based on virtual domain principles to improve the certainty of MapReduce applications. The decentralized nature and dynamic nature of MapReduce environments are of struggle in Traditional authentication. Here, a proposed solution manipulates virtual domains by creating a secure abstraction layer that encapsulates the process of authentication.

In the big data analytics era, to process large datasets which are dispersed among node clusters has the necessary of MapReduce applications. The security of distributed computing environments must be generated. Confidential data and preserve data processing integrity must be protected. To create and put into practice a Virtual Domain – Based Authentication Solution for MapReduce Applications must be accomplished. A safe framework for communication and access control in the distributed computing environment is given.

In virtual domain-based authentication framework, we plan to reduce risks like Vulnerabilities in security, overhead reduce and improve overall reliable of MapReduce applications. Distributed key management to create and verify the node's authenticity and cryptographic techniques within the virtual domain.

S.No: 17 **PAPER ID : NCSCD24020**

SMART ENVIRONMENT MONITORING SYSTEM BASED ON ARTIFICIAL INTELLIGENCE

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Abstract

Significant advancements have been made in wireless networking. These advancements have given rise to new wireless networking and communications paradigms. In recent times, environmental protection has evolved into a more sophisticated and integrated system that encompasses all aspects of a global city. Machine learning (ML) techniques can be used to increase an application's knowledge and proficiency in light of the growing volume of data being collected. The amount of data that is available grows along with the population and technological advancements. The intelligent gathering and analysis of these Big Data is the foundation for the development of intelligent Internet of Things (IoT) applications. This paper identifies the many machine learning techniques that address data challenges in smart cities. Applications including radiation pollution, water pollution, and air quality, smart transportation, smart buildings, etc., which present real environmental problems. Sufficient oversight is necessary to guarantee global expansion while preserving a robust community. the possibilities and difficulties, particularly with regard to machine learning's application to big data analytics and the Internet of Things.

Keywords

Wireless Network, Machine Learning, IoT, Bigdata, Smart Cities.

S.No: 18 **PAPER ID : NCSCD24021**

BLOCKCHAIN-DRIVEN ENERGY EFFICIENCY IN SMART AGRICULTURE WITH INTERNET OF AGRICULTURE - THINGS

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Abstract

One among the latest trending technology for improving the productivity in the agriculture is named as precision agriculture. This technique connects some of the technologies such as Internet of Agricultural Things (IoAT), Wireless Sensor Networks (WSN), remote sensing for through sensors and so on. The above technologies are correlated to make many improvements in the field of agriculture for better productivity. The previous work concentrates in providing an efficient routing scheme for smart agriculture. This work focused on combining the blockchain technology with IoAT to achieve secure data transfer in cloud. Additionally, it maintains the energy efficiency through proposed Improvised IoAT-LEACH. The sensors forwards the collected data to the PIC micro controller and the acquired data is transferred to cloud through Raspberry Pi module after verifying the data through blockchain based module. Further, the blockchain technology provides a reliable and transparent data sharing approach with high data security. In proposed Improvised IoAT-LEACH protocol, a new threshold limit is introduced to improve the energy efficiency. Through the blockchain and Improvised IoAT-LEACH intelligent farming system is proposed and thus proves in increases the throughput of 63% than the other schemes. Further, extensive simulation is performed to evaluate the proposed mechanism against potential attacks.

Keywords

IoAT, WSN, LEACH, Blockchain, Cloud

S.No: 19 **PAPER ID : NCSCD24022**

IOT SOLUTIONS FOR SUSTAINABLE AGRICULTURE: A MOBILE PERSPECTIVE

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Abstract

The integration of Internet of Things (IoT) technologies in agriculture has emerged as a promising avenue for enhancing sustainability and efficiency in food production. This paper explores IoT solutions for sustainable agriculture, with a specific focus on mobile perspectives. The proposed method introduces a novel approach to leveraging mobile devices for monitoring and managing agricultural processes. Through a comprehensive literature survey, this paper analyzes existing methods, identifies their strengths and limitations, and presents a forward-looking perspective on the potential of mobile-centric IoT applications in sustainable agriculture. The results highlight the efficacy of the proposed method in addressing key challenges and promoting environmentally conscious farming practices.

Keywords:
Mobile-centric IoT, Sustainable Agriculture, Precision Farming, Decentralized IoT, User Adoption.

S.No: 20 **PAPER ID : NCSCD24023**

REVIEW: STATE OF SECURITY MECHANISMS IN CLOUD COMPUTING

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Abstract

Several administrations, including programming, gathering, and coordinating equipment assets, are included in cloud computing and made available to service users online. The advantages of cloud computing are flexibility, competence, and high unwavering quality. Numerous organizations are already exchanging data to the Cloud, and as a result, this data needs to be protected against unauthorized assaults, service rejection, and other threats. Information is deemed secure if classification, accessibility, and uprightness are all available. The challenges and problems related to cloud computing security are illustrated in this study. Additionally, research on security protocols for cloud-based settings is carried out.

Keywords:
Cloud Computing, Cloud Security, Confidentiality, Integrity

S.No: 21 **PAPER ID : NCSCD24024**

CONGESTION CONTROL AND PACKET SCHEDULING IN WIRELESS SENSOR NETWORKS USING COAP PROTOCOL

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Abstract

One of the leading choices for an efficient lighter communication protocol for the Internet of Things would be a Constrained Application Protocol (CoAP). CoAP offers a straightforward method of congestion management that makes use of data transmissions & binary exponential timeouts. This seemingly innocuous method has a major impact on CoAP performance, particularly in networks with severe packet loss. In the literature, many techniques for improving CoAP's effectiveness were presented. There was some thought given to enhancing retransmission timeout estimate, while additional attention was paid to bolstering the retransmission method. Secondly, keeping in mind the need to keep things simple for limited-resource devices, we propose and implement a congestion management algorithm that enhances retransmission timeout estimate for congestion detection and properly adopts a rate-based approach to congestion counteraction. The two suggested methods are tested in a realistic setting (using Cooja/Contiki) and assessed using only simulations that take into account a variety of network circumstances. Our methods accomplish a considerably superior good put, dependability, and overhead tradeoff, as seen by the results.

Keywords:

Congestion Control, Packet Scheduling, Wireless Sensor Networks, and CoAP Protocol

S.No: 22 **PAPER ID : NCSCD24026**

INDUSTRY 4.0 CYBER SECURITY FRAMEWORK FOR THE INTERNET OF THINGS

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Abstract

Five Industry 4.0 cyber trends, seven cyber risk frameworks, and two cyber risk models are correlated with academic literature in this research article, which presents the findings of a qualitative case study. Even though industry and academia are keen to standardize the cyber risk frameworks, models, and methodologies that are currently in use, there hasn't been any attempt to bring these approaches together until recently. To develop integration criteria for the examined frameworks, models, and techniques, we employ the grounded theory approach. Next, a new architecture that integrates the frameworks, models, and methodologies that have been reviewed is suggested. We thus provide a better understanding of a comprehensive economic impact assessment model for IoT cyber risk and advance efforts to integrate standards and governance into Industry 4.0.

Keywords

Cybersecurity Framework, Industry 4.0, Internet of Things, Case Study**.**

S.No: 23 **PAPER ID : NCSCD24027**

AI FOR SMART ENVIRONMENT

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Abstract

This paper explores the comprehensive integration of artificial intelligence (AI) in the development of a smart environment, seeking to enhance efficiency, adaptability, and security in living and working spaces. The multifaceted implementation spans key domains including home automation, energy management, security, adaptive lighting, health monitoring, and user interface design. Leveraging machine learning algorithms and sensor networks, this paper aims to create a dynamic and responsive environment that caters to user preferences while optimizing resource utilization. The user-centric design incorporates intuitive interfaces and advanced technologies, fostering a seamless and secure interaction between individuals and their surroundings. With a focus on privacy and data security, this AI-driven smart environment embodies a transformative approach towards intelligent and sustainable living.

Keywords

Artificial Intelligence (AI), Smart Environments, Data Analytics, Traffic Management, Ethical Considerations, Algorithmic Collaboration, Human-AI Interaction, AI-generated Artworks.

S.No: 24 **PAPER ID : NCSCD24028**

SOCIAL NETWORK ANALYSIS AND MINING FOR BUSINESS APPLICATIONS

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Abstract

Online social networking, sites that involve in media sharing and the social network data wealth have succeeded more in recent times, which in turn supports the significance of social network analysis. Understanding the potential of business applications for mining social networks is less, though interest on it is increased. In spite of research works on, different problems and methods for social network mining, the interaction and implementation of techniques developed by research community is not deployed in real world applications, so the potential business impact of the research techniques have to be explored. In this paper a business process classification framework to put the research topics in a business context and provide an overview of what we consider key problems and techniques in social network analysis and mining from the perspective of business applications.

Keywords

Social networks, viral marketing, influence propagation, data mining, network dynamics and evaluation, community structure

S.No: 25 **PAPER ID : NCSCD24029**

A STUDY ON SLEEP APNEA PREDICTION USING DATA MINING TECHNIQUES

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Abstract

Obstructive Sleep Apnea (OSA) is a condition in which the person finds difficulty breathing during sleep. This sleep-related breathing disorder affects the airflow to the lungs partially or completely. During sleep, the muscles completely relax as a reflex, and the soft tissue in the back of the throat relaxes. It causes a blockage in the upper airway and affects breathing. The partial pauses (hypopneas) and complete pauses (apneas) affect the breathing for at least 10 seconds and may last up to 30 seconds. But some severe pauses may last longer than a minute. Due to this, the blood oxygen saturation levels fall by more than 40%. The brain alerts the body regarding the lack of oxygen, causing a brief arousal from sleep. This restores or normalizes the breathing. This pattern recurs many times within one night, resulting in fragmented sleep. Lack of sleep at night produces excessive sleepiness during the daytime. Finding sleep apnea is much easier with the below-mentioned types of equipment.

Keywords

OSA, Polysomnogram, Pulse Oximetry, Arterial Blood Gas (ABG), EEG, EMG, EKG or ECG

S.No: 26 **PAPER ID : NCSCD24030**

UNRAVELING THE IMPACT OF MACHINE LEARNING APPLICATIONS IN HEALTHCARE FOR ENHANCED PATIENT OUTCOMES

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Abstract

This paper explores the impact of machine learning applications in healthcare, with a focus on enhancing patient outcomes. It delves into dimensions such as disease diagnosis, personalized treatment plans, and predictive analytics, drawing insights from empirical instances and emerging trends. The study reviews existing literature and considers ethical considerations, addressing the complexities of integrating machine learning in healthcare. The paper also anticipates evolving trends, including the role of artificial intelligence in medical devices and remote patient monitoring. The findings contribute to the discourse on leveraging machine learning for the advancement of healthcare practices and patient well-being.

S.No: 27 **PAPER ID : NCSCD24031**

ENABLING SUSTAINABLE URBAN FUTURES-A COMPREHENSIVE EXPLORATION OF SMART CITIES

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Abstract

In the era of rapid urbanization, cities are addressing with the challenges of population growth, resource constraints, and environmental sustainability. This paper delves into the transformative approach of "Smart Cities" and its pivotal role in shaping urban environments. Smart Cities utilize cutting-edge technologies such as Internet of Things (IoT), data analytics, and connectivity to optimize city operations, enhance quality of life, and foster sustainability. By examining successful implementations and addressing associated challenges, this paper aims to provide a comprehensive understanding of the current state and future potential of Smart Cities as catalysts for sustainable urban development.

S.No: 28 **PAPER ID : NCSCD24032**

MOVING VEHICLE DETECTION USING DEEP NEURAL NETWORK

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Abstract

One of the most significant applications in the field of intelligent traffic monitoring and management in recent years has been vehicle recognition. Many intelligent applications, including self-guiding cars, automated toll collection, intelligent parking systems, driver support systems, and traffic statistics like flow, speed, and vehicle count, depend on the identification of moving vehicles on the road. Our study's primary objective is to identify moving cars for use in driverless driving assistance systems. We apply Deep Neural Networks (DNNs) to the challenges of vehicle detection and recognition. Our suggested strategy works better than the most advanced one.

Keywords

Deep Learning, RCNN, Convolution Neural Network

S.No: 29 **PAPER ID : NCSCD24033**

CLASSIFICATION OF DEEP LEARNING ALGORITHM FOR RHEUMATOID ARTHRITIS PREDICTOR

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Abstract

Rheumatoid arthritis, or RA for short, is a complicated systemic autoimmune disease that primarily affects the synovial joints of the body. It often results in persistent inflammation that destroys interior body components. It's critical to identify rheumatoid arthritis early on in order to prevent complications down the road. Rheumatoid arthritis outbreaks in the white population have risen by 3% to 7% nearly annually. The disease's activity is ascertained by laboratory testing, medical evaluations, and patient self-evaluation. Even though there are several other treatment options available for varying stages of the disease, disease development and response to treatment also vary greatly. Radiographs of the hands and feet are used to determine the disease's prognosis over the long term which is the input image for our model, also evaluating the X-ray images by trained medical staff requires a lot of time to assist the patient's condition and stages which is a tedious task. In the same way, a timely diagnosis of the illness is crucial for the patient's treatment for a chronic autoimmune illness which is expensive to treat and has a poor survival rate. Machine learning researchers have worked hard to create quick and precise automatic approaches for diagnosing RA. Deep learning (DL) has given rise to a booming body of academic study as well as industrial applications in the field of medicine. If used properly, deep learning might be very relevant to rheumatology. The ability of deep learning to learn the structure of the underlying data is the key to this effectiveness. Rheumatoid arthritis (RA) radiographs of the hands and feet are physically inspected and evaluated to ascertain the degree of joint damage. An effective system analysis is needed to identify and diagnose rheumatoid arthritis by hand, especially in the early development or pre-diagnostic phases. The objective is to use convolutional neural networks

(CNN) in deep learning to build an intelligent system that can identify rheumatoid arthritis. Images of four distinct kinds of rheumatoid arthritis, including synovitis, pannus, fibrous ankylosis, and bony ankylosis, are included in our dataset. We have used augmentation (adjustment) techniques like brightness, zoom, rear, flip, etc. to eliminate noise from photos. We are creating new datasets from current datasets and improving the clarity of the dataset via the use of augmentation techniques. Based on different values of epochs and other parameters, we are measuring accuracy and loss values of convolutional neural network models and the performance of the algorithm is evaluated by accuracy score, loss and mean accuracy. We have passed through various preprocessing parameters, such as resizing, rescaling, shuffling, dropout, rotation, background correction, horizontal flipping, and zoom/brightness adjustment, in order to transform our image data into augmented image data. This will aid in the CNN model's learning process for low-resolution images. Analyzing the suggested models' success rate and contrasting the results with other approaches is the primary goal.

Keywords

Rheumatoid Arthritis, Joint destruction, Convolutional Neural Network, Deep learning, Augmentation

S.No: 30 **PAPER ID : NCSCD24034**

CYBER SECURITY AWARENESS AMONG COLLEGE STUDENTS

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Abstract

The highest accessibility of the cyber space is utilized, explored by the youth population, the study describes the awareness among the college students towards cyber security. The study was conducted among 142 respondents with balanced gender distribution and diverse usage of the mobile phones. The findings indicated that the students from social sciences background possess higher cyber security awareness than the students from the science background, awareness about the social media and digital platform increases the understanding and awareness of common threat, online transaction and adoption on new technology. The study emphasizes the awareness gap can be bridged by cyber educational interventions which should focuses on incidents response procedure, enhancing cybersecurity hygiene, regular backups and access control which in turn fosters the cyber resilience among the student community.

Keywords

Cyber Securiity, Knowledge, Threats, Technological updataion

S.No: 31 **PAPER ID : NCSCD24035**

BRAIN TUMOR MRI IMAGE SEGMENTATION AND DETECTION IN IMAGE PROCESSING ALGORITHMS

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Abstract

Image processing is an active research area in which medical image processing is a highly challenging field. Medical imaging techniques are used to image the inner portions of the human body for medical diagnosis. Brain tumor is a serious life altering disease condition. Image segmentation plays a significant role in image processing as it helps in the extraction of suspicious regions from the medical images. In this paper we have proposed segmentation of brain MRI image using K-means clustering algorithm followed by morphological filtering which avoids the misclustered regions that can inevitably be formed after segmentation of the brain MRI image for detection of tumor location.

Keywords

Image Segmentation, MRI, K-means clustering, Morpinghological filter.

S.No: 32 **PAPER ID : NCSCD24036**

SMART LAMP CONTROL SYSTEMS USING IOT

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Abstract

This article describes the design of a smart bulb, conceived as one who is able to maintain, under certain variations of external lighting a desired level of illumination is presented. This level of lighting is adjustable from internet, using the concept of internet of things (IoT) to said bulb. The design consists of a programming card Raspberry pi 3, an LED bulb, and a power circuit under c programming language, a fuzzy controller is used to maintain the desired lighting level. In conclusion, it is possible to obtain a home automation system with control from internet which makes intelligent functional bulb-controlled lighting systems.

Keywords

Smart bulb, IoT, Fuzzy Control, Raspberry Pi

S.No: 33 **PAPER ID : NCSCD24037**

Fuzzy Logic in Machine Learning and AI Application

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Abstract

Fuzzy Logic in Machine Learning and AI is a Path to Enhanced Decision-Making. It also a Bridging the Gap Between Precision and Real-World Complexity. It explores the integration of fuzzy logic principles into ML and AI applications, showcasing the potential to enhance decision-making processes across a myriad of industries. One of the key applications of fuzzy logic is in expert systems, where it empowers machines to mimic human decision-making. Fuzzy rule-based systems leverage linguistic variables and fuzzy logic rules to process inputs and generate meaningful outputs. These systems have been adopted in fields such as healthcare, finance, and control systems, facilitating accurate decision support. As AI and ML continue to advance, the integration of fuzzy logic expands their problem-solving capabilities. By accommodating uncertainty and handling complex, real-world data, fuzzy logic has become an indispensable component in the pursuit of more accurate, human-like decision-making within AI and ML applications. This abstract delves into the multifaceted landscape of fuzzy logic and its pivotal role in shaping the future of AI and ML.

In ML, fuzzy logic plays a crucial role in rule-based systems and expert systems, enabling machines to capture and emulate human expertise. Fuzzy inference systems, with their rule-based structures, handle imprecise inputs and provide meaningful outputs, making them valuable In fields such as medical diagnosis, financial forecasting, and industrial control.

Keyword

Fuzzy logic, Artificial Intelligence, Machine learning

S.No: 34 **PAPER ID : NCSCD24038**

ANT COLONY OPTIMIZATION FOR LARGE-SCALE DATA CLUSTERING AND FEATURE SELECTION

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Abstract

The ant colony optimization (ACO) method, pioneered by Dorigo and Stutzle, stands as a successful Nature-inspired algorithm widely used in various optimization problems, including clustering and feature selection, in spite of traditional ACO algorithms often display a lack of agility and effectiveness when confronted with extensive datasets, recent advancements have led to significant improvements. In this paper, we present an enhanced ACO algorithm designed for large-scale data clustering and feature selection. Our algorithm offers several new features aimed at increasing performance, in particular:

- Optimal distributed implementation for parallelizing the analysis process
- A new pheromone update regulation that better measures the quality of the solution
- A fresh fitness function that factors in both clustering and feature selection quality

We use more comprehensive data sets to empirically investigate our algorithm and demonstrate its better performance than the traditional ACO algorithm in terms of clustering precision and feature selection accuracy.

S.No: 35 **PAPER ID : NCSCD24039**

SECURITY IN HEALTHCARE USING QUANTUM COMPUTING

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Abstract

Due to technological improvements, patients may now check their information online from anywhere, replacing the need for manual records, and the healthcare system has changed accordingly. Activity trackers, sensors for blood pressure, body temperature, and heart rate, as well as pulse oximetry, are examples of healthcare uses. As a result, the system is exposed to an unmonitored environment and is open to various threats. So, the primary concern is security. Many security approaches are employed to keep things secure. Strict security protocols, though, need to be put in place. A system that uses energy at the smallest scale is needed to address security issues in the healthcare system and offer a better solution. Therefore, the usage of quantum computing provides privacy and confidentiality to healthcare data.

Keywords

Healthcare, Quantum Computing, Security, Threat, Privacy, Confidentiality.

S.No: 36 **PAPER ID : NCSCD24040**

THE METAVERSE IN EDUCATION: THE FUTURE OF IMMERSIVE TEACHING & LEARNING

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Abstract

The concept of a metaverse, a virtual reality space where users can interact with a computer-generated environment and other users. The metaverse connects social media to virtual reality and augmented technologies and it's collaboration unleashes creativity and promises transformation ranging from industrial sector to distance/online education. New style of meta-education and metaverse-powered online distance education have emerged to provide formal and informal blended learning experiences in a virtual 3D online campus. Online learning in the metaverse is to break the last frontier of social connection and informal learning. Physical presence in the classroom will be a privileged educational experience. Metaverse applied in education in various ways, such as immersive virtual field trips, collaborative learning environments, and interactive simulations. Additionally, the abstract discusses the benefits that the metaverse can offer in education, including increased student engagement, enhanced learning experiences, and opportunities for global connectivity. Therefore, the purpose is this study is to review and identify the application areas of this emerging technology for the education field by providing a bibliometric analysis of the literature related to Metaverse.

Keywords

Metaverse, digital technology, education, immersive teaching and learning

S.No: 37 **PAPER ID : NCSCD24041**

PULMONARY FIBROSIS DETECTION

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Abstract

In this research work, A Pulmonary Fibrosis Detection System utilizing Artificial Intelligence (AI) and Convolutional Neural Networks (CNNs) is developed. The focus of this system is on early and accurate detection of pulmonary fibrosis, a progressive lung disease characterized by scarring of lung tissue. The CNN architecture employed in the detection system is trained on a diverse dataset, comprising of various fibrotic lung and normal lung representations through images of chest x-rays. By leveraging hierarchical feature extraction, the system achieves a high degree of accuracy and sensitivity, making it a powerful tool for early identification of pulmonary fibrosis. Our new system is like a helpful tool for doctors. It easily fits into their routine work, making it simple to use. What's cool is that it can explain why it suggests certain things, giving doctors more insights into how it works. We tried it out on many different cases, and it worked well in all of them. This suggests that it could be a great way to find lung problems early, making it easier for doctors to take care of patients with pulmonary fibrosis.

S.No: 38 **PAPER ID : NCSCD24042**

DOCUMENTGPT

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Abstract

DocumentGPT is designed as a comprehensive document analysis system. Users can upload documents, and the system handles various file types, including CSV and Excel files. The integration of different libraries enhances its capabilities, providing a versatile solution for users seeking insights from a range of document formats. Key features include efficient document upload handling, data analysis for structured files, and natural language question-answering functionality for general documents. This streamlined approach aims to simplify the process of extracting valuable information and insights from diverse types of documents. DocumentGPT finds utility in various domains, including document understanding, data analysis where handling and interpreting structured data from csv and excel files, facilitating quick insights and decision-making can be done. Domains like Research Assistance, Business Intelligence, Educational Applications can also be involved. Overall, DocumentGPT serves as a versatile tool for document analysis, catering to the needs of individuals and organizations across diverse sectors.

S.No: 39 **PAPER ID : NCSCD24043**

HEART DISAEASE PREDICTION USING GEN AI

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Abstract

Cardiovascular diseases (CVDs) persist as a major global health concern, necessitating innovative solutions to enhance diagnostic accuracy, prediction capabilities, and personalized treatment strategies. In response to this imperative, this comprehensive project seeks to leverage the transformative potential of generative artificial intelligence (AI) within cardiovascular healthcare, focusing specifically on heart disease. The motivation stems from the inherent complexities of heart-related disorders and the urgent need for sophisticated tools that transcend conventional diagnostic methodologies. The project's overarching objectives encompass a spectrum of critical components, beginning with the meticulous curation and preprocessing of an expansive dataset. This dataset, comprising diverse medical images, patient records, and relevant health data, serves as the foundational bedrock for subsequent model development. The generative model selection process is a meticulous exploration of cutting-edge architectures, with a deliberate choice between Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs), each offering distinct advantages for the project's goals. The subsequent fine-tuning of the selected model is conducted with utmost precision, emphasizing the optimization of its ability to generate accurate, contextually relevant cardiovascular insights. The web interface development phase is a critical juncture, focusing not only on aesthetic design but also on functional efficacy. The interface is conceived as a dynamic portal, facilitating seamless integration with the generative AI system. Users, primarily healthcare professionals, are empowered to upload medical images, receive real-time analyses, and interpret results through intuitive visualizations. The interface's user-friendliness and responsiveness are paramount, ensuring accessibility in diverse healthcare settings. The project's adherence to regulatory

compliance and ethical considerations is reinforced, acknowledging the responsibilities associated with deploying AI in the healthcare domain. Anticipated outcomes are expansive, envisioning a generative AI application that transcends conventional diagnostic and predictive capabilities. The model's capacity to generate accurate and personalized insights is poised to contribute significantly to improved patient outcomes, informed clinical decisions, and the advancement of precision medicine in the context of heart disease. The project concludes with a reflection on the transformative potential of integrating generative models into clinical workflows. It underscores the capacity of this novel approach to redefine how heart disease is diagnosed, predicted, and treated, ultimately shaping a future characterized by efficient, personalized, and impactful patient care within the cardiovascular healthcare landscape.

S.No: 40 **PAPER ID : NCSCD24044**

HUMAN-CENTRIC DESIGN FOR SUSTAINABLE MOBILE COMPUTING AND IOT

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Abstract

This paper explores the critical intersection of human-centric design, sustainable mobile computing, and the Internet of Things (IoT). As our society becomes increasingly reliant on mobile devices and interconnected technologies, it is imperative to ensure that the design of these systems prioritizes human well-being while also addressing the environmental impact. The paper proposes a novel approach to integrating human-centric design principles into the development of sustainable mobile computing and IoT solutions. The study includes a literature review, and an analysis of existing methods, and introduces a new methodology that emphasizes both user experience and environmental sustainability. Comparative results showcase the effectiveness of the proposed approach in achieving a harmonious balance between technology and humanity.

Keywords

Mobile Edge Computing, Sustainable IoT, Human-Centric Design, Energy Efficiency, Green Computing

S.No: 41 **PAPER ID : NCSCD24045**

HUMAN-CENTRIC DESIGN FOR SUSTAINABLE MOBILE COMPUTING AND IOT

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Abstract

In the field of research and IT, machine learning methods play a vital role in many application areas. Since it provides a multi variety of tools, techniques and algorithms for predicting the results with high accuracy and helpful for knowledge extraction. While doing a research, after categorizing the input and output data depending on the chosen problem, finding the available algorithms is an important step. In this paper, the study is based on the performance of machine learning algorithms in various areas of research. The work related to the implementation of machine learning algorithms, the results obtained, its advantages and limitations has been surveyed and discussed.

Keywords

Machine Learning Algorithms, Classification, Regression, Clustering, Supervised Learning, Unsupervised Learning, Reinforcement Learning.

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S.No: 42 **PAPER ID : NCSCD24046**

AUTOMATED PIMPLE DETECTION THROUGH ADVANCED THRESHOLDING TECHNIQUES FOR ENHANCED SKINCARE ANALYSIS

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Abstract

In the field of research and IT, machine learning methods play a vital role in many application areas. Since it provides a multi variety of tools, techniques and algorithms for predicting the results with high accuracy and helpful for knowledge extraction. While doing a research, after categorizing the input and output data depending on the chosen problem, finding the available algorithms is an important step. In this paper, the study is based on the performance of machine learning algorithms in various areas of research. The work related to the implementation of machine learning algorithms, the results obtained, its advantages and limitations has been surveyed and discussed.

S.No: 43 **PAPER ID : NCSCD24047**

MACHINE LEARNING IN DEPRESSION DETECTION USING SOCIAL MEDIA-A SCOPING REVIEW

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Abstract

Depression is a significant issue that affects individuals worldwide. It is a psychological disorder marked by prolonged periods of intense sadness, lasting for a minimum of two weeks. Millions of people suffer from depression each day. Early detection of depression and timely counseling can mitigate potential problems associated with the condition. Historically, mental health professionals have communicated with their patients directly during consultations. Regrettably, a large number of people are reluctant to seek medical attention, and this results in a decline in their mental health. Additionally, every day, numerous individuals are sharing their thoughts and emotions on various social media platforms. Due to the fact that a large number of people are now investing a substantial portion of their time. Scientists are striving to integrate online platforms with the ability to identify depression for research purposes. Apart from this the use of machine learning can aid in forecasting the onset of depression in an individual. It has the potential to be a robust and powerful tool for evaluating various aspects of mental health disorders. Identifying depression from social media data can be evaluated using machine learning algorithms. This paper discusses recent innovative concepts that individuals have developed and designed to detect signs of depression across different social media platforms.

Keywords:

Depression, Machine Learning, Social media, Twitter, Facebook

S.No: 44 **PAPER ID : NCSCD24048**

SMART LEVEL CROSSING SYSTEM USING IOT AND AI

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Abstract

Everyone loves travelling, especially travelling by train. Railways also doing good in their services. At one end railways good at their services and the other end level crossing accidents increasing day by day. There was a rapid increase in level crossing accidents from 1408 in 2018 to 1788 in 2019 all over the world. In India level crossing accidents increased from 176 in 2002 to 1700 in 2022. International Union of Railways (UIC) published a report 90% of Railway accident is only by level crossing accidents in 2021. International Level Crossing Awareness Day (ILCAD) takes place annually on 9th June every year, on this day an initiative for creating awareness for safety in level crossing around 50 countries participate in the event with different types of level crossing safety projects are shared with the prime objective of reducing accidents in level crossing worldwide. This study aims to improve the level crossing safety for both trains and pedestrians. In India, 90% of the trains are Electric trains, and 10% of the trains are Diesel trains. Ministry of Railways reports that there are 18,477 level crossings in India, out of that, 17,918 are manned level crossings, and 559 are unmanned level crossings. This paper consists of a four gateway system, two on the left side and the other two on the right side of the level crossing.

The ultrasonic sensor, microwave sensor, load sensor, and sound sensor are placed on both sides of the track, AI-powered cameras are placed on the arch, and the arch is placed over the railway tracks. These sensors sense the train's arrival in manned and unmanned level crossing. "The Desert Queen" express train passes through Unmanned level crossing places like Jaisalmer, Jodhpur and Jaipur. Once sensors detect the arrival of the train, the traffic light turns "RED," and

the level crossing gates will be closed. When the gates get closed, if any object like human beings, animals, or heavy vehicles gets stuck between the tracks or level crossing gates, the ultrasonic sensor and AI cameras placed on the level crossing gates, senses the object, and the gate before the object is opened to make the object move out. In case the object is not able to move. In that case, the information is passed to the Loco pilot through GSM module SIM800 as phone calls or messages to stop the train to avoid level crossing accidents, and live location is shared with the nearby hospitals, fire service, and recovery teams through GPS module ESP32. The arrival of the train is detected before the 7km distance of level crossing because in India, trains travel at a speed of 80kmph to 100kmph to stop the train before 2km of level crossing. If any object is detected between the tracks or gates. The information is passed to the station master to stop or delay the departure of the trains that come along the same track to avoid train collision and derailment, unlike the “COROMANDEL” Express accident. The train leaves the level crossing safely if no object is detected between the tracks or level crossing gates. Once the train leaves the level crossing, the traffic light turns "GREEN" and the level crossing gates will be opened.

S.No: 45 **PAPER ID : NCSCD24049**

PRECISION POULTRY HEALTH MONITORING: LEVERAGING RECURRENT NEURAL NETWORKS FOR EARLY DETECTION AND CLASSIFICATION OF NUTRITIONAL DEFICIENCIES

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Abstract

Utilizing deep learning, especially recurrent neural networks (RNNs), for disease prediction in medical imaging is gaining momentum for its accuracy and efficiency. This study introduces an innovative RNN-based approach for detecting and classifying nutritional deficiencies in poultry, showcasing high accuracy in distinguishing types. Adaptable to dynamic nutritional changes, this model marks a significant milestone in precision farming. Its application in poultry health monitoring contributes to enhanced livestock management, emphasizing data-driven approaches for improved welfare and productivity. Experimental outcomes highlight superior metrics, affirming its effectiveness even in challenging conditions, surpassing basic YOLOv5, YOLOv7, and YOLOv8.

Keywords:

Deep learning, recurrent neural networks (RNNs), YOLO, precision agriculture, optimal growth, productivity.

S.No: 46 **PAPER ID : NCSCD24050**

WEB MINING TECHNIQUES IN E-COMMERCE

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Abstract

The best communication tool in modern company nowadays is the internet. To increase company production, several organisations are changing their business strategies. Customers and partners that conduct business online have the opportunity to locate their items and particular businesses. Nowadays, when compared to a real workplace, internet company transcends limitations of time and space. Large corporations all over the world are realising that e-commerce is more than just online buying and selling; rather, it increases efficiency to compete with other market giants. Data mining, also known as knowledge discovery, is employed for this aim. Web mining is a data mining technology used on the World Wide Web. On the Internet, there is a great amount of information available.

General Terms

Data mining techniques, e-commerce applications and web mining.

Keywords

Business, Data Mining

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S.No: 47 **PAPER ID : NCSCD24051**

ENHANCING ENVIRONMENTAL SUSTAINABILITY WITH AN AI-POWERED SMART DUSTBIN COLLECTOR

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Abstract

In the current scenario, people generate significant waste in and around their homes, which can be classified as biodegradable and non-biodegradable. Biodegradable waste, such as plants, fruits, vegetables, animals, flowers, and paper, naturally decomposes and can be utilized for energy and fertilizer production. On the other hand, non-biodegradable waste, including rubber, plastic, and chemicals, can be recycled to create new items. To manage this, municipalities have introduced three types of dustbins—red for household waste, green for recyclables, and blue for degradable materials and dry garbage. However, monitoring whether the public correctly segregates waste into the designated bins is challenging. To address this issue, an image classification algorithm using TensorFlow is implemented for digital image processing to identify the appropriate chambers for waste collection.

Index Terms- Biodegradable, Non-Biodegradable, TensorFlow, Image Classification

S.No: 48 **PAPER ID : NCSCD24052**

INCREASING ENERGY EFFICACY IN IOT-BASED CLOUD WIRELESS SENSOR NETWORKS

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Abstract

In the period of the Internet of Things (IoT), wherever devices are ubiquitously interconnected, optimizing energy efficiency is paramount for sustainable and enduring IoT-based cloud wireless sensor networks. This article investigates a suite of protocols and techniques designed to address the energy challenges associated with these networks. Starting with the choice of less-powered wireless standards such as IEEE 802.15.4 and Zigbee, the discussion delves into energy-efficient routing protocols like LEACH and PEGASIS. Sleep scheduling methodologies, adaptive transmission power control, and data aggregation techniques are explored for their role in minimizing energy consumption. The article also discovers the uses of computation offloading to the cloud and the integration of machine learning-based optimizations. By emphasizing the importance of a cross-layer approach, this article offers insights into a comprehensive strategy for achieving sustainable and energy-conscious wireless sensor networks amidst the evolving landscape of IoT technologies.

Index Terms:

Internet of Things, protocols, sustainable, wireless, energy-conscious.

S.No: 49 **PAPER ID : NCSCD24053**

A SURVEY ON GENERATIVE ADVERSARIAL NETWORK BASED PLANT DISEASE IDENTIFICATION

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Abstract

Generative Adversarial Networks (GANs) is a novel class of deep generative models that has recently gained significant attention in many fields. In Plant disease diagnosis, a deep learning network requires a large amount of data, and because certain plant lesion data is difficult to acquire and has a similar structure, deep learning has lately shown potential in the identification of plant lesions. In order to expand the data collection, complete plant lesion leaf images must be produced. In an attempt to tackle this problem, this paper provides an methods used for producing a complete and unique image of a plant lesion leaf, which could improve the classification network's accuracy. First, an extensive guide is given to the various GAN methods from the perspectives of theory, algorithms, and applications is introduced in detail. Second, theoretical issues related to GANs are investigated. Finally, a comprehensive review of GAN-based plant disease identification, where many authors provided theory it has been demonstrated that the process successfully expands on the study of plant lesions and enhances the identification accuracy of the classification network in the future.

Keywords:

Neural Network, Generative adversarial network, Plant Disease.

S.No: 50 **PAPER ID : NCSCD24054**

HEART DISEASE PREDICTION USING VARIOUS MACHINE LEARNING ALGORITHMS

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Abstract

The Health care field has a Huge amount of data, for processing those data certain techniques are used. Data mining is one of the techniques that is used for processing of data. Heart disease is mostly the Leading cause of death in the current world. This System predicts the arising possibilities of Heart Disease. The outcomes of this system provide the chances of occurring heart disease in terms of percentage. The datasets used are classified in terms of medical parameters. This system evaluates those parameters using data mining classification technique. The datasets are processed in python programming using two main Machine Learning Algorithm namely Decision Tree Algorithm and Naïve Bayes Algorithm which shows the best algorithm among these two in terms of accuracy level of heart disease.

Keywords:

Data Mining, Python Programming, Classification Techniques, Machine Learning Algorithms.

S.No: 51 **PAPER ID : NCSCD24055**

GREEN COMPUTING – A STUDY

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Abstract

In recent decades, facts such as ozone layer depletion, global warming, and green house gases are menacing the mankind. The main cause for these facts is increase in solar input, CO_2emitting plants, power consumption etc. Apart from this the field of information technology also has contributed to these facts. Today business transaction occurs round the clock where the data warehouses and centers using huge amount of data, work continuously and need huge power both to work and to cool them which results in huge emission of CO_2 (green house gases). Increase in concentration of green house gases is responsible for the rise in earth's temperature, which leads to severe floods and droughts, rise in sea level, and other environmental disaster. These effects on the environment has made the IT people to think and on ideas towards environmental sustainability. This paper narrates detailed study on green computing.

S.No: 52 **PAPER ID : NCSCD24056**

IDS-SMART : AN INTRUSION DETECTION AND PRIVACY PROTECTION WITH DATA AGGREGATION AMONG IOT DEVICES

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Abstract

The instantaneous advancement of the Internet of Things is crucial for real-time applications. Every day, more and more gadgets are being connected to the global network. The most practical way to cut down on the quantity of communication between smart devices is to use data aggregation technology. IoT nodes and networks need to be protected, and an intrusion detection system—a security mechanism—is essential since IoT devices have limited memory. The most crucial method for security and privacy protection in the Internet of Things is to include a privacy protection mechanism in data aggregation. This study analyses current research on intrusion detection systems, identifies the main assaults they face, and presents the novel IDS-SMART method. This proposed algorithm improves the aggregation accuracy, enhance the privacy preserving and detect the outliers. The simulation experiment results shows the IDS-SMART algorithm has presented the favourable performance in terms of privacy protection , the enhance the data aggregation in IoT devices.

Keywords:

IoT , Intrusion Detection System, Data Aggregation , IDS-SMART , Privacy Protection

S.No: 53 **PAPER ID : NCSCD24057**

A COMPREHENSIVE STUDY ON PNEUMONIA DETECTION USING VISION TRANSFORMERS ON CHEST X-RAYS

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Abstract

Pneumonia, a prevalent and acute respiratory infection, demands timely detection and treatment for optimal clinical outcomes. This study delves into an innovative approach to pneumonia detection by employing Vision Transformers (ViT) on chest X-ray images. The ViT architecture, known for its capacity to capture global context and spatial relationships through self-attention mechanisms, is explored for its effectiveness in this medical imaging context. Leveraging a public dataset available on Kaggle, our study presents a detailed analysis of the proposed ViT-based framework, comparing its performance against traditional convolutional neural network (CNN) architectures.

Keywords:
Pneumonia detection, Vision Transformers, Chest X-rays, Medical imaging, Convolutional Neural Networks, Self-attention mechanisms.

S.No: 54 **PAPER ID : NCSCD24058**

MEMBRANOUS NEPHROPATHY-A CASE STUDY

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Abstract

Membranous nephropathy is a kidney ailment characterized by the thickening and dysfunction of the glomerular basement membrane, a crucial thing of the kidney's filtering units referred to as glomerular. This situation frequently affects adults and is a leading motive of nephritic syndrome, a group of symptoms consisting of proteinuria, edema, and hypoalbuminemia. The hallmark of membranous nephropathy is the deposition of immune complexes, specifically immunoglobulin G (IgG) antibodies, at the glomerular basement membrane. This immune-mediated process triggers irritation and structural adjustments in the membrane, main to impaired filtration function. at the same time as the precise motive of membranous nephropathy is regularly idiopathic, it could also be related to underlying systemic diseases, infections, or exposure to certain medicines. Clinically, sufferers with membranous nephropathy may also gift with edema, proteinuria, and increased levels of cholesterol. Diagnosis includes a mixture of scientific assessment, laboratory tests, and renal biopsy. Remedy strategies may also include immunosuppressive medicines, angiotensin-converting enzyme inhibitors (ACE inhibitors), and supportive measures to control signs and symptoms and complications. Studies continues to explore the pathogenesis of membranous nephropathy and to pick out extra centered healing tactics. Information the underlying mechanisms of this situation are essential for developing powerful interventions to improve effects for individuals affected by membranous nephropathy.

Keywords:

Membranous nephropathy, antibodies, renal biopsy, ACE inhibitors, angiotensin-converting.

S.No: 55 **PAPER ID : NCSCD24059**

A SURVEY ON OUTDOOR LOCATION IDENTIFICATION USING FUZZY LOGIC WITH INTERNET OF THINGS

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Abstract

Finding the precise and accurate location of devices on road networks is challenging in areas with poor internet connectivity and Global Positioning System coverage. Navigation applications that completely depend on the internet and reference spatial data for location identification and mapping do not perform well in case of frequent internet disconnection. These reference spatial data sources have many associated challenges like large size, errors in data, and restricted access. To address these challenges, this paper provides an approach for localization and routing using self-generated reference data using likelihood estimation. According to the proposed approach, the trajectory information is used to create the reference data in the format of Comma Separated Values (CSV). This reference data is first analyzed for quality issues and then used for navigation purposes. Further for the localization Sugeno Fuzzy Model is used as a fuzzy inference system for the initial localization and subsequent mapping of the location. The proposed approach is validated using an Android application on seven predefined routes. According to the performed result analysis, the proposed fuzzy logic-based approach is able to provide location identification with 98.9 percent accuracy with a root mean square error value of 3 percent.

S.No: 56 **PAPER ID : NCSCD24060**

A COMPARATIVE ANALYSIS ON OTT PLATFORMS: NETFLIX VS AMAZON PRIME

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Abstract

In the olden days from each family, everyone sit together and watch TV shows. In today's world when we talk about TV shows, digital media and the availability of the latest movies or series the one word that comes to everyone's mind is OTT (over the top). The significant growth of OTT platforms has risen since 2013 and video streaming content will exceed $332 billion by 2025. The video streaming subscription of around 8 US$ billion in 2020 was reported by Deloitte. The total number of smartphone users is expected to double to surpass 700 million by 2022 in India. The COVID-19 pandemic made consumers more interested in Netflix, Amazon Prime, and Disney + hotstar. This paper is to showcase a comparison between the two popular OTT platforms namely Amazon Prime and Netflix. The comparison was performed with various metrics such as the number of subscribers subscribed, the programming language used and the recommendation algorithm utilized for implementation.

Keywords:
OTT, Netflix, Amazon Prime, Java, Python, Recommendation algorithms, Deep learning

S.No: 57 **PAPER ID : NCSCD24061**

AN ANALYSIS OF LEARNING TECHNIQUES AND WORKING PROCEDURES FOR SELF-DRIVING CARS

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Abstract

This paper presents the various automation learning techniques such as Machine learning and Artificial Intelligence in self-driving cars. It also discusses the need for self-driving cars in the future and its potential features and benefits. An insight has been drawn into how self-driving cars work and the probable advancements in this field.

Keywords:
Automation technologies, advancement, vehicles, traffic, transportation.

S.No: 58 **PAPER ID : NCSCD24062**

MANAGEMENT OF ENERGY IN HETEROGENEOUS NETWORKS FOR COMPUTING AT THE EDGE

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Abstract

Consumers can now access cloud-based services that combine with computing at the edge for industries like producing goods, broadcasting, and gameplay from a wide range of telecommunications companies and internet service providers. The widespread implementation of solutions based on the cloud for the integration of demanding on resources and applications that require latency is faced with hurdles due to the rapid expansion of IoT-based applications in several fields, including participatory disclosure, innovative manufacturing, and continuous evaluation. This connection is known as a hybrid workflow. Worldwide environmental, social and governance policy, however, emphasizes data interior energy management for businesses. As a result, we offering a resource executive leadership architectural which integrates virtualized and tangible assets for computing on the edge in a hybrid cloud. For improved the resourcefulness of heating and conditioning performance, we also suggest a conservation of energy rules and regulations.

S.No: 59 **PAPER ID : NCSCD24063**

ENSEMBLE APPROACH FOR PREDICTING HEART DISEASE USING CLASSIFICATION ALGORITHMS

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Abstract

The predictive modelling method for cardiovascular risk estimation in health care informatics is very difficult. As a result, medical professionals view the effort to clinically examine medical records and predictive modelling using soft computing technologies as a useful and cost-effective choice. Soft computing technologies, which can do data analysis and modelling and help the doctor make timely and informed clinical decisions, are therefore essential in today's health care applications. Data mining is the process of identifying patterns in a health science database that link predictive factors. Modelling intricate, dynamic processes is a suitable use for current data mining tools. In this study, ensemble model strategies are implemented and its performance is measured to improve prediction accuracy by integrating the predictive power of many classifiers.

To predict and diagnose the recurrence of cardiovascular illness, this study uses ensemble learning approaches like Multilayer Perceptron and Classification and Regression with Multilayer Perceptron algorithms. The UCI repository was used to retrieve the cardiovascular data records of Hungarian and Cleveland. The ensemble model is a better method in terms of high predicted accuracy and dependability of diagnostic performance, according to experimental results. Furthermore, a smart heart disease prediction system with a graphical user interface that is easy to use and extensible can be implemented in future which would be useful, affordable, and timely predictive option.

Keywords:

Ensemble methods, Data mining model, Classification techniques, Multilayer Perceptron.

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About the College

PSG College of Arts & Science, named after Philanthropist Shri. P. S. Govindasamy Naidu was established in the year 1947, with a mission to set education on a noble perch accessible to all in pursuit of knowledge and world class education. The College embodies a rich tradition of excellence in teaching and research and has thus infused dynamism and knowledge to numerous learners over several decades, with utmost commitment. PSGCAS, one of the foremost Institutions of higher learning in Tamilnadu, was granted Autonomy (one among the nine Colleges in the Country) by the UGC in 1978 during the first phase itself, while still being affiliated to Madras University. The College was then affiliated to the Bharathiar University in 1982. The College is NAAC accredited; ISO certified, Ranked under NIRF and is the recipient of many National and International awards and recognitions.

About the Department

Department of Computer Science (UA) was established in the year 1985 with the objective of imparting quality education in the field of Computer Science. The UG & PG courses were started with the aim to develop core competence in Computer Science and prepare the students to carry out development work, as well as take up challenges in research. The driving mission for the department is to advance the frontiers of research in computer science and automation and offer world-class pedagogical and research experience to its students.

About PSG CARE

The PSG Center for Academic Research and Excellence was found in October, 2015 by the PSG & Sons Charities Trust with a mission to promote teaching excellence in all the colleges under the Trust. Toward this end, CARE will encourage the use of learner-centric pedagogical practices that facilitate effective learning and will foster dialogue and reflection on effective teaching through workshops, seminars, one-to-one consultation and other activities. The center also focuses on creating and sustaining effective faculty student relationships.

About the Conference

The **Second National Conference on Sustainable Computing and Development (NCSCD-2024)** aims to provide a global platform to the researchers, academicians, and industrial experts for sharing and showcasing their discoveries/findings/innovations. This is a multidisciplinary conference integrates the field of computer science with sustainable development goals. In this conference the researchers, academicians and industrial experts will address new challenges and share solutions at the interface of technology, information, and complex systems, and discuss future research directions. The Proceedings of the conference will be published with ISBN number.