
RESEARCH

PUBLICATIONS

JULY 2024



RESEARCH

JULY 2024

PUBLICATIONS

“ Research is creating new knowledge. ”

Neil Armstrong

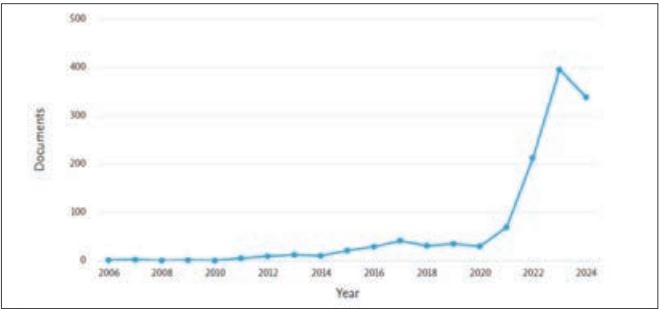
“ If we knew what we were doing, it wouldn't be called research, would it? ”

Albert Einstein

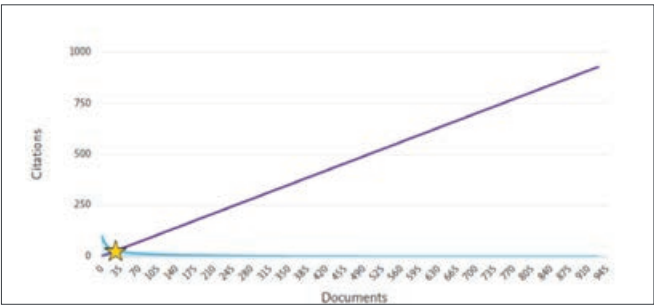
“ Research is formalized curiosity. It is poking and prying with a purpose. ”

Zora Neale Hurston

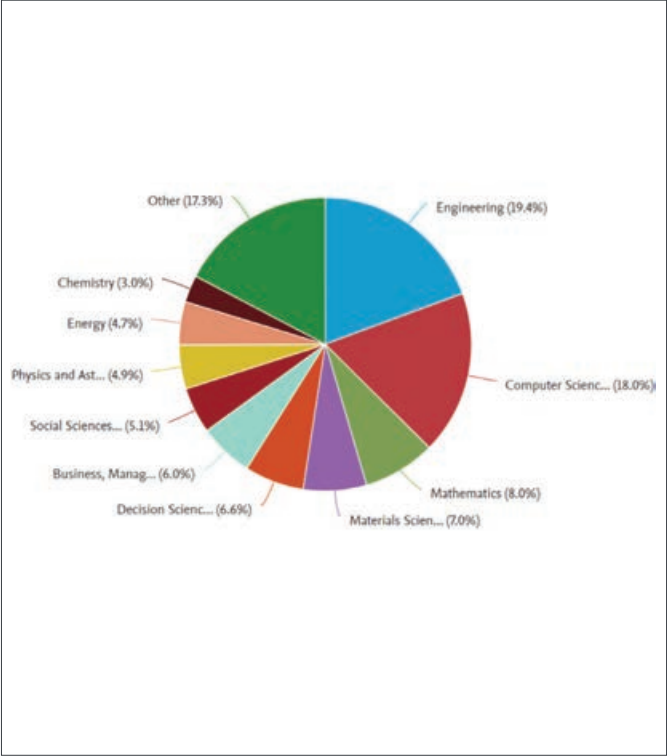
Documents by Year



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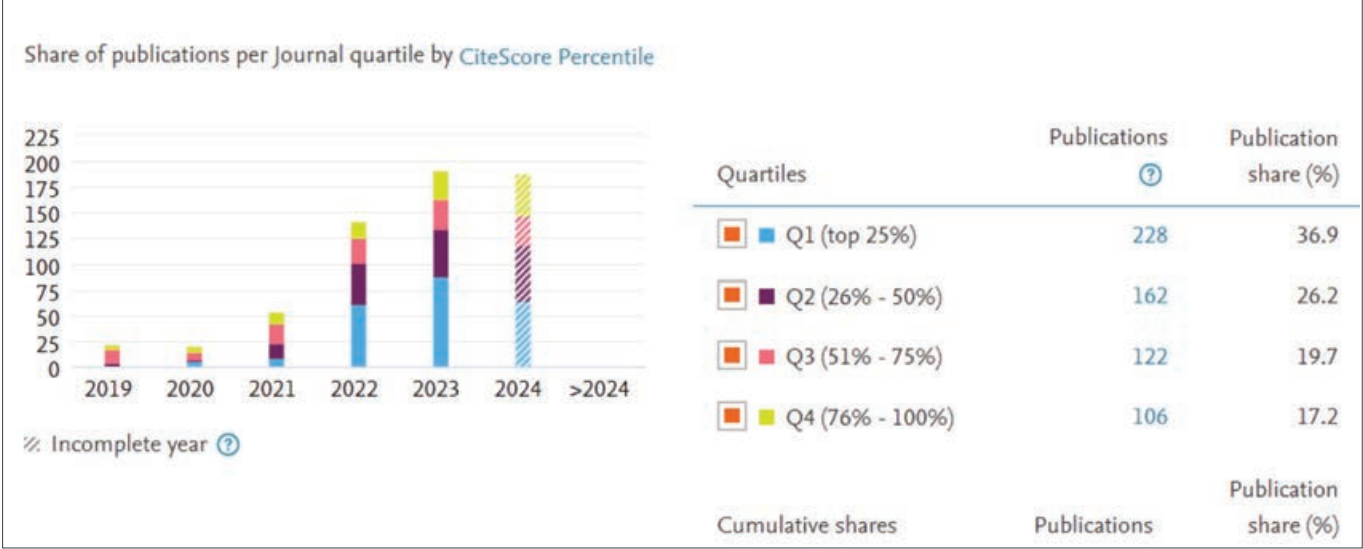
Documents by Subject Area



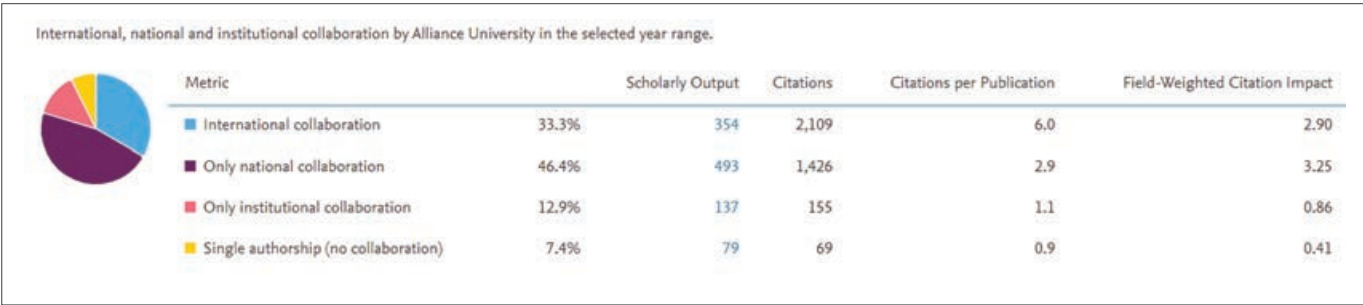
Summary

1063	456	3759	3.5	2.62
Scholarly Output	Authors	Citation Count	Citations per Publication	Field-Weighted Citation Impact
21.9%				
All Open Access				

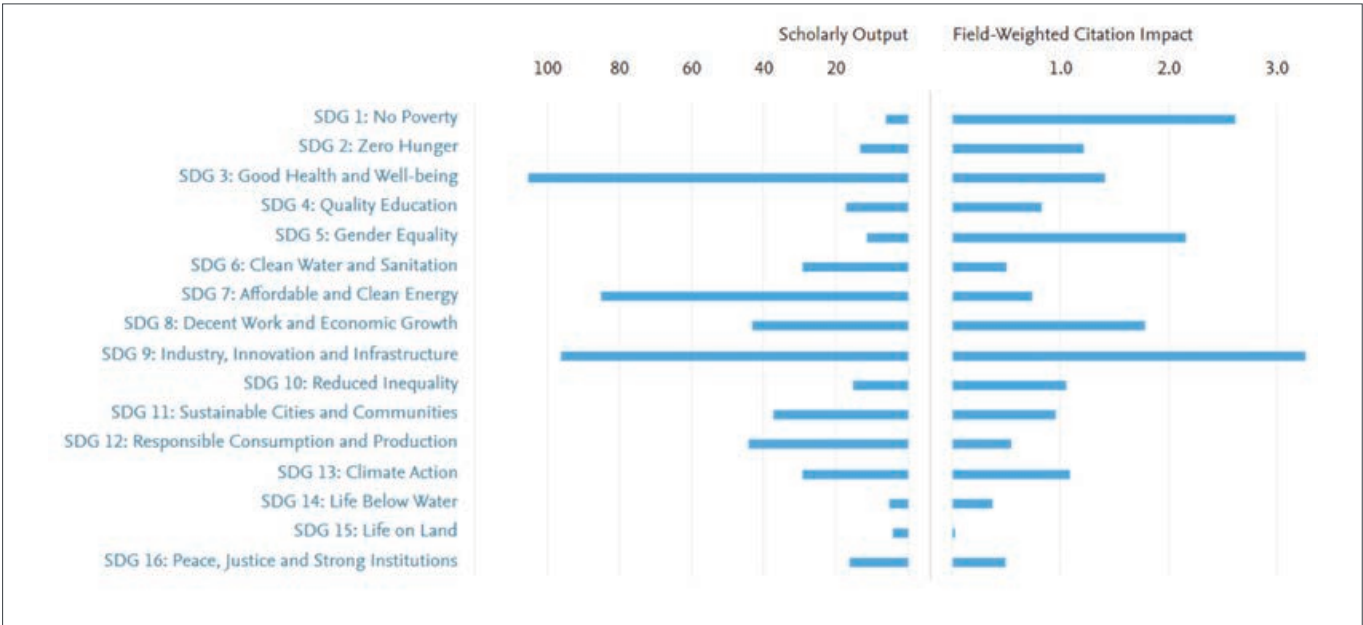
Publication by Journal Quartile



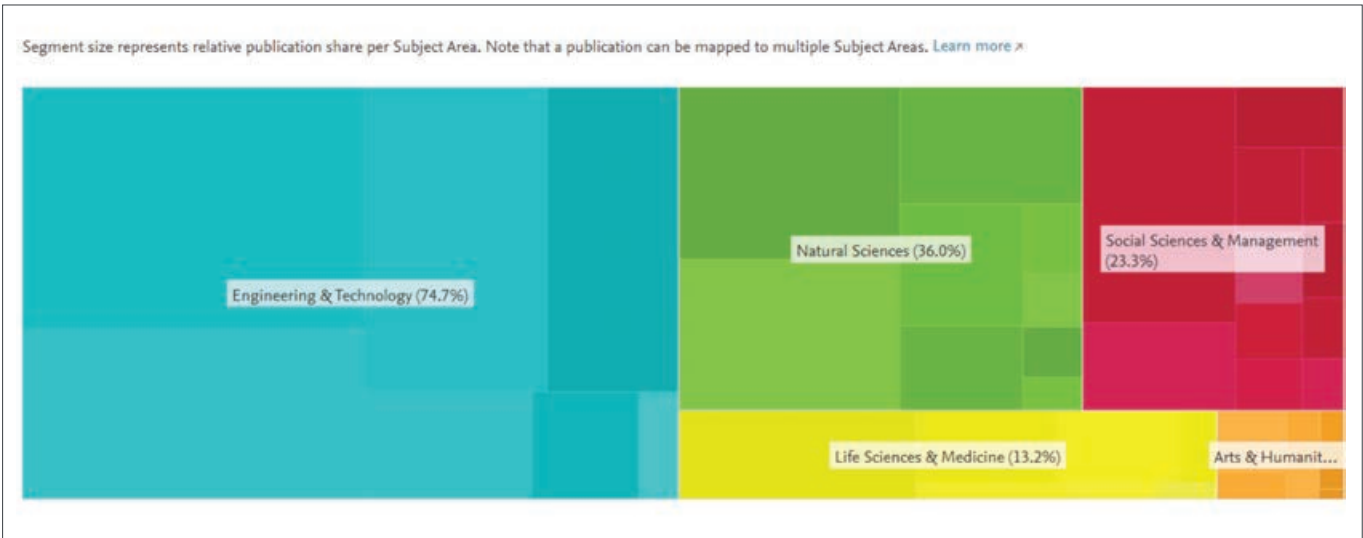
Geographical Collaboration Overall



Publication by SDG



Subject Areas



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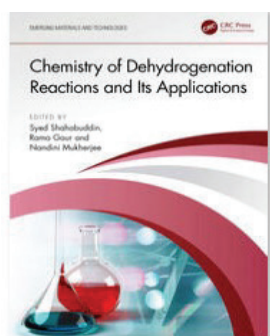
DEHYDROGENATION REACTIONS OF HYDROCARBONS: ALKANE, ALKENES AROMATIC HYDROCARBONS

Pathak, Chandni, Bahadur, Vijay

Chemistry of Dehydrogenation Reactions and Its Applications Pages 87 - 1001 January 2024

Dr. Chandni Pathak

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Book

Chemistry of Dehydrogenation Reactions and Its Applications

Edited By Syed Shahabuddin, Rama Gaur, Nandini Mukherjee

Edition

1st Edition

Abstract

Dehydrogenation reactions are of great importance and provide a wide range of synthetic utility. These reactions are generally defined as the removal of one or more pairs of hydrogen atoms from the parent molecule to obtain an unsaturated bond or bonds. Dehydrogenation reactions play a critical role in producing olefins from saturated hydrocarbons through the refinery cracking process. A large volume of olefin derivatives and butadiene derivatives that are essential as feedstock for the organic chemicals industry are produced through this process from appropriate hydrocarbon feedstock. Therefore, the selective conversion of linear alkanes to α -olefins under mild conditions is a highly desirable transformation. The dehydrogenation of hydrocarbons is a thermodynamically uphill process; thus, it requires a suitable catalyst that can act as a sacrificial hydrogen

acceptor so that the reaction can proceed smoothly. In this chapter, we give insight into the development of different processes and catalysts that are involved in the dehydrogenation of alkanes, alkenes, and aromatic hydrocarbons. We start with an ephemeral overview, proceed to the fundamentals, factors, and challenges to accomplish better catalytic efficacy, and follow by discussing synthetic routes including specific optimization methods of different catalysts. In conclusion, researchers have overcome some contemporary challenges to provide a better process for the dehydrogenation of hydrocarbons.

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DATAVERSE: EMPOWERING ARTIFICIAL INTELLIGENCE USING METAVERSE

Patni, Jagdish Chandra, Send mail to Patni J.C., Choudhury, Tanupriya, Mishra, Pawan Kumar Bahadure, Nilesh, Aswal, Mahendra Singh

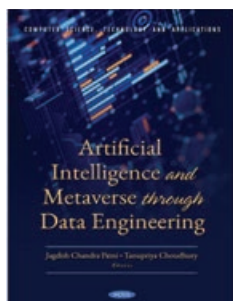
Artificial Intelligence and Metaverse through Data Engineering Pages 159 - 1728 July 2024

Dr. Jagdish Chandra Patni

Professor,

Alliance College of Engineering and Design,

Alliance University, Bangalore, INDIA



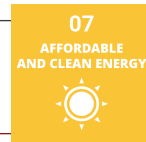
Abstract

Numerous cutting-edge methods and technologies have been developed in tandem with the Internet's explosive expansion from the 1990s to date to address users breath-taking experiences and more virtual interactions online. With great experience and transforming digitally, many virtual worlds have been created, however the majority are incoherent rather than being integrated into a platform. The term "metaverse" has been used in this context to refer to a shared virtual environment that is supported by numerous cutting-edge technologies. Artificial intelligence (AI) is one of these technologies, which has demonstrated the significant value of boosting the ultimate experience that will act like human intelligence created in the virtual environment. Here, we talked about how AI and its subfields, machine learning and deep learning architectures and its algorithms, contributed to the

creation and growth of the metaverse. We present a thorough analysis of AI-based techniques for a variety of technical areas (such as NLP, blockchain, machine learning, computer vision, neural network) that have the potential to create virtual worlds in the metaverse as our key contributions. Several key AI-aided applications are also being investigated for potential deployment in virtual environments, including those in manufacturing, healthcare, smart cities, and gaming. We wrap up the major contribution and provide the groundwork for some potential future Artificial intelligence research areas for the metaverse. This chapter introduces the concepts of developing and optimising AI techniques to enhance the quality of apps created in the metaverse and strengthen the virtual world.

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Author keywords- Artificial Intelligence; Data engineering; Machine learning; Metaverse

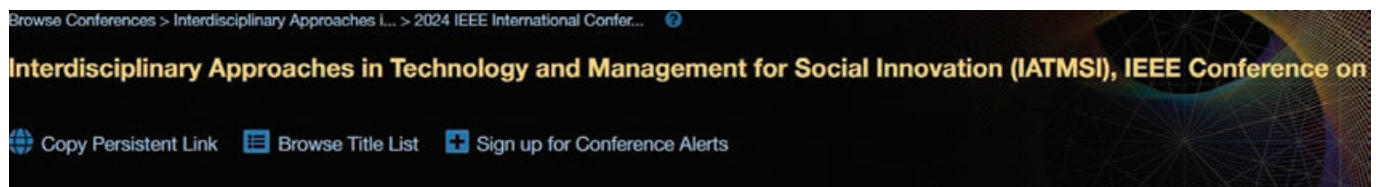


LUNG CANCER DISEASE PREDICTION USING HYBRID SUBTRACTIVE CLUSTERING METHOD

Paul, Banibrata, **Mir, Mahmood Hussain**, Murugan, Stalin, Kurian, Asha
2nd IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation, IATMSI 2024 Gwalior 14 March 2024 through 16 March 2024

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Abstract

As of right now, lung cancer is the primary cause of cancer-related deaths worldwide for both men and women. One possible explanation for lung cancer's main cause is smoking. 86% to 96% of instances of lung cancer are thought to originate in the epithelial cells that line the larger and smaller airways (bronchi and bronchioles), despite the fact that lung cancer can grow in any section of the lung. The primary objective of this work is to identify lung cancer using the ANFIS

approach based on subtractive clustering method. Using Kaggle, we have made use of the Lung Cancer dataset. The network is trained using data from 1000 lung cancer patients, ranging in age from 14 to 73. The proposed system uses 11 input attributes to assess the presence and absence of lung cancer during testing, and consistently achieves 100% accuracy for each clustering radii.
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Author keywords- Adaptive Neuro-Fuzzy Inference System (ANFIS); Artificial Neural Network; Lung cancer; Lung cancer dataset; Subtractive Clustering Method



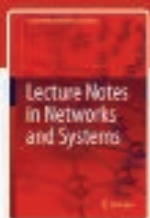
PREVENTION AND MITIGATION OF INTRUSION USING AN EFFICIENT ENSEMBLE CLASSIFICATION IN FOG COMPUTING

Paul, P. Mano, Shekhar R., Jingle, I. Diana Jeba, Jingle, I. Berin Jeba

Lecture Notes in Networks and Systems Volume 898, Pages 173 - 181 2024

Dr. P. Mano Paul

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Alliance University, Bangalore, INDIA



Book series

Lecture Notes in Networks and Systems

Abstract

Cloud services in fog network is a platform that inherits software services to a network to handle cloud-specific problems. A significant component of the security paradigm that supports service quality is represented by intrusion detection systems (IDSs). This work develops an optimization environment to mitigate intrusion using RSLO classifier on a cloud-based fog networks. Here, a three-layer approach namely the cloud, end point, and fog layers is used as a trio to carry out all of the processing. In the cloud layer, three layers of processing are required for handling the dataset metrics which are data transformation metrics, feature selection metrics, and classification processes. With log transformation, data is transformed

using KS correlation-based filter which is used to choose a feature. The classification using an ensemble methodology of RideNN classifiers which is a Rider Sea Lion Optimization (RSLO), a created classifier, is used to tune the ensemble classifier. Physical work is carried out at another layer called an end point layer. A trained ensemble classifier is used for intrusion detection in the fog layer. A greater precision, recall, and F-measure were obtained with an accuracy approximately 95%, with all benefits of the suggested RSLO-based ensemble strategy.

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Author keywords- Cloud computing; Ensemble classifier; Fog computing; Intrusion



A REVIEW ON TOOL LIFE IN COAL MEASURES ROCKS

Prakash, Satya

Journal of Mines, Metals and Fuels Open Access Volume 72, Issue 1, Pages 1 - 11 January 2024

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Editor : Dr. Jayanta Bhattacharya

Print ISSN : 0022-2755

Frequency : Monthly

Published since : 1952

Publisher/s : Informatics Publishing Limited and Books & Journals Private Ltd.

Journal of Mines, Metals & Fuels is published by Informatics publishing Ltd. and Books & Journals Private Limited. This is in publication since 1952. This is now an Open Access, Double-Blind Peer Reviewed, and Monthly Journal. The journal invites submissions in the below mentioned categories:

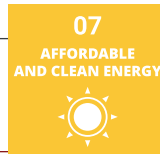
- Review Articles, Short Review, Research Articles, Case Report, Short

Abstract

Tungsten carbide inserts in rock drill bits are predominantly used in drilling rocks, particularly in mining industries. The research studies performed on drill bits have been limited to several factors such as collecting failure data of bit components from the field, conducting wear tests considering rock properties, and introducing new coated insert materials. The role of Artificial Intelligence (AI) and Machine Learning (ML) for the betterment of tool wear with real-time data is limited. The present study has offered an evaluative perspective of an essential industrial issue. In this

review, a concept map presents a visual organization and representation of knowledge obtained during the study. Utilizing the propositions from the concept map, a brief review of the integrated concepts of researchers relating drill bits, failure data, numerical and statistical models, wear analysis, reliability assessment, and prerequisites in developing new materials have been discussed in the backdrop of the present study.
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Author keywords- Coatings; Reliability; Rock Properties; Tool Life; Tool Wear

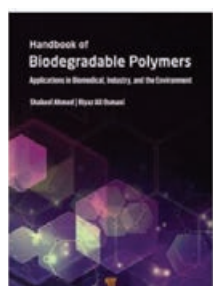


POLYMER NANOCOMPOSITES FOR BIOMEDICAL APPLICATIONS

Radoor, Sabarish, Jayakumar, Aswathy, Karayil, Jasila, Lee, Jaewoo, **Parameswaranpillai, Jyotishkumar**, Siengchin, Suchart, Fischer, Steffen, *Handbook of Biodegradable Polymers: Applications in Biomedical Sciences, Industry, and the Environment* Pages 525 - 5492 August 2024

Dr. Jyotishkumar Parameswaranpillai

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1st Edition

Handbook of Biodegradable Polymers Applications in Biomedical Sciences, Industry, and the Environment

By Shakeel Ahmed, Riyaz Ali M. Osmani

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Abstract

This chapter focuses on nanomaterial-based polymer nanocomposites for biomedical and biotechnological applications. Metals, clay, carbon, and silica-based nanocomposites have been used as biosensors, drug delivery vehicles, antimicrobial agents, etc. In recent years, considerable attention is given to

polymer nanocomposites for bio-related fields such as pharmaceutical and tissue engineering. These have tunable properties.

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Author keywords- bearishness; bullishness; cumulative open interest; future & options; Open interest; option chain; predict stock market; put-call ratio



EFFECTS OF NON-PERFORMING ASSETS ON THE BANKING SECTOR IN INDIA

Raj, Kschitez, **Hameed, Abdul**, Babu, Tina, Nair, Rekha R, Chinnaiyan R., Rajesh Sharma R.

4th International Conference on Innovative Practices in Technology and Management, ICIPTM 2024 Noida 21 February 2024 through 23 February 2024

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Innovative Practices in Technology and Management (ICIPTM), International Conference on

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Abstract

This research addresses a critical concern within the Indian banking industry - Non-Performing Assets (NPAs). NPAs often act as an impediment to the smooth operations of banks, leading to reduced profits or significant losses. Recent trends have witnessed the closure or merging of many banks, aiming for more effective control under larger entities. The Government and the Reserve Bank of India have implemented various policies to strengthen regulations and curb the persistent rise of NPAs in the banking sector. Stricter measures and laws against defaulters have contributed to some

degree of control over NPAs. This study aims to shed light on NPA trends and their impact on bank returns, influencing the overall banking industry. Additionally, data will be collected from relevant stakeholders to gain deeper insights into the causes of NPAs and their repercussions. The research will explore effective measures to prevent loans from turning into NPAs, identify segments of society more susceptible to NPAs, and substantiate findings with numerical data.

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Author keywords- Bank Closures; Government Policies; Indian Banking Industry; on-Performing Assets; Profitability; Reserve Bank of India.N; Reserve Bank of India.on-Performing Assets



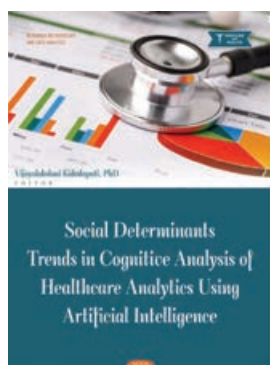
ARTIFICIAL INTELLIGENCE AND COMPUTER VISION HEALTHCARE MANAGEMENT SYSTEM AND APPLICATIONS

Rajagopal R, Senbagavalli M,

Social Determinants Trends in Cognitive Analysis of Healthcare Analytics Using Artificial Intelligence Pages 457 - 479 June 2024

Dr.R. Rajagopal

Associate Professor,
Alliance College of Engineering and Design,
Alliance University, Bangalore, INDIA



Abstract

Artificial Intelligence is going to be a powerful tool for Industry 4.0 which can be extensively used. During the period of pandemic, technology has played a very important role. AI-based computer vision has emerged as a viable option for earlier, faster, cheaper, and less invasive illness identification, as well as accurate and robust statistical models using medical data acquired in massive quantities by current healthcare systems. Digital Healthcare is a future discipline that uses information and communication technology to improve healthcare quality, safety, accessibility, and productivity. These technologies include hardware as well as software

solutions and services. It necessitates more curricula focused on prediction and prevention, as well as modalities of education delivery that train professionals and patients to use the digital healthcare business 4.0. The role of Artificial Intelligence and computer vision is to provide intelligent computer algorithms to manage the health care systems efficiently, so the training required to understand, analyse, and interpret the data present in the various images. The main objective of this chapter is to analyse the different techniques to predict the disease using Artificial Intelligence and Computer Vision.

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Author keywords- Analytics; Artificial Intelligence; Artificial Neural Networks; Computer Vision; Diagnosis; Healthcare; Medical; Treatment Profitability; Reserve Bank of India.N; Reserve Bank of India.on-Performing Assets



A NOVEL ENERGY EFFICIENT IRS-RELAY NETWORK FOR ITS WITH NAKAGAMI-M FADING CHANNELS

Rajak, Shaik, **Muniraj, Inbarasan**, Selvaprabhu, Poongundran, Kumaravelu, Vinoth Babu, Sarker, Md. Abdul Latif, Chinnadurai, Sunil, Han, Dong Seog,
ICT Express Open Access Volume 10, Issue 3, Pages 507 - 512 June 2024

Dr. Inbarasan Muniraj

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ICT Express
Open access

10.2
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Abstract

In this paper, we have investigated the performance of energy efficiency (EE) for Intelligent Transportation Systems (ITS), which recently emerged and advanced to preserve speed as well as safe transportation expansion via a cooperative IRS-relay network. To improve the EE, the relay model has been integrated with an IRS block consisting of a number of passive reflective elements. We analyze the ITS in terms of EE, and achievable rate, with different signal-to-noise ratio (SNR) values under Nakagami-m fading channel conditions that help the system to implement in a practical scenario. From the

numerical results it is noticed that the EE for the only relay, IRS, and proposed cooperative relay-IRS-aided network at SNR value of 100 dBm is 30, 17, and 48 bits/joule respectively. In addition, we compare the impact of multi-IRS with the proposed cooperative IRS-relay and conventional relay-supported ITS. Simulation results show that both the proposed cooperative IRS-relay-aided ITS network and multi-IRS-aided network outperform the relay-assisted ITS with the increase in SNR.

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Author keywords- Energy efficiency; Intelligent Transportation Systems; IRS; Nakagami-m fading; SNR



MOTION DETECTION USING HEURISTIC AI BASED MACHINE LEARNING APPROACHES

Rajesh Sharma R., Gandhi, Rajiv, Shanmugaraja K., Sungheetha, Akey, Chinnaiyan R., Jegan J.

4th International Conference on Innovative Practices in Technology and Management 2024, ICIPTM 2024

Dr. Rajesh Sharma R

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Abstract

Due to the rise in shootings, knife assaults, terrorist attacks, etc. that occur in public spaces around the world, it has become crucial to identify suspicious activity in these areas. This study employs convolutional neural networks and deep learning to identify suspicious activity in videos and photos. We examine various CNN architectures and contrast their precision. We describe

the design of our system, which can analyze live video feed from cameras and determine whether an activity is suspicious or not. We also make suggestions for potential future advancements in the field of detecting suspicious activity.

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Author keywords- Suspicious Activity Detection; Convolutional Neural Networks; Deep Learning



CLICKBAIT DETECTION FOR AMHARIC LANGUAGE USING DEEP LEARNING TECHNIQUES

Rajesh Sharma R, Sungheetha, Akey, Haile, Mesfin Abebe, Kedir, Arefat Hyeredin, Rajasekaran A, Charles Babu G.

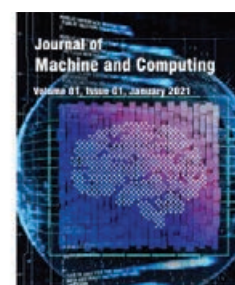
Journal of Machine and Computing Open Access Volume 4, Issue 3, Pages 603 - 615
July 2024

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Journal of Machine and Computing

Journal of Machine and Computing (JMC) addresses the current research activities in machine and computing with examination of rigorous concepts of computation and is facilitated by the distinction between intelligence, mathematical, symbolical, and physical computations. JMC focuses machine and intelligence seems to be the current technical buzzword as everyone seems to be getting into this research. JMC welcomes submissions of innovative research, theoretical and practical significance that will support, and foster technology improvements related to Intelligence, Mechanical, Expert System, Robotics, Mechatronics and computation. Papers on theory, method, and modeling as well as on application topics are all invited.



Abstract

Because of, the increasing number of Ethiopians who actively engaging with the Internet and social media platforms, the incidence of clickbait is becomes a significant concern. Clickbait, often utilizing enticing titles to tempt users into clicking, has become rampant for various reasons, including advertising and revenue generation. However, the Amharic language, spoken by a large population, lacks sufficient NLP resources for addressing this issue. In this study, the authors developed a machine learning model for detecting and classifying clickbait titles in Amharic Language. To facilitate this, authors prepared the first Amharic clickbait dataset. 53,227 social media posts from well-known sites including Facebook, Twitter, and YouTube are included in the dataset. To assess the impact of conventional machine learning methods like Random

Forest (RF), Logistic Regression (LR), and Support Vector Machines (SVM) with TF-IDF and N-gram feature extraction approaches, the authors set up a baseline. Subsequently, the authors investigated the efficacy of two word embedding techniques, word2vec and fastText, with Convolutional Neural Network (CNN), Long Short-Term Memory (LSTM), and Gated Recurrent Unit (GRU) deep learning algorithms. At 94.27% accuracy and 94.24% F1 score measure, the CNN model with the rapid Text word embedding performs the best compared to the other models, according to the testing data. The study advances natural language processing on low-resource languages and offers insightful advice on how to counter clickbait content in Amharic.

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Author keywords- Amharic Language; Artificial Neural Networks; Clickbait Detection; Deep Learning Techniques; Machine Learning Techniques; Natural Language Processing; Social Media

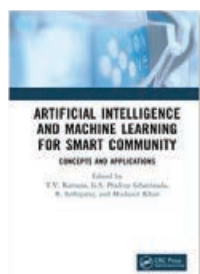


ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FOR SMART COMMUNITY: CONCEPTS AND APPLICATIONS

Ramana T.V., **Ghantasala, G.S. Pradeep**, Sathiyaraj R., Khan, Mudassir,
Artificial Intelligence and Machine Learning for Smart Community: Concepts and Applications Pages 1 - 1631 January 2024

Dr. GGS Pradeep

Professor,
Alliance College of Engineering and Design,
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Book

Artificial Intelligence and Machine Learning for Smart Community

Concepts and Applications

Edited By T V Ramana, G S Ghantasala, R Sathiyaraj, Mudassir Khan

Abstract

Intelligent systems are technologically advanced machines that perceive and respond to the world around them. Artificial Intelligence and Machine Learning for Smart Community: Concepts and Applications presents the evolution, challenges, and limitations of the application of machine learning and artificial intelligence to intelligent systems and smart communities. · Covers the core and fundamental aspects of artificial intelligence, machine learning, and computational algorithms in smart intelligent systems · Discusses the integration of artificial intelligence with machine learning using mathematical modeling · Elaborates concepts like supervised and unsupervised learning, and machine learning algorithms, such as linear regression, logistic regression, random forest, and performance evaluation matrices · Introduces modern algorithms such as convolutional neural networks and support vector machines · Presents

case studies on smart healthcare, smart traffic management, smart buildings, autonomous vehicles, smart education, modern community, and smart machines Artificial Intelligence and Machine Learning for Smart Community: Concepts and Applications is primarily written for graduate students and academic researchers working in the fields of computer science and engineering, electrical engineering, and information technology. Seasonal Blurb: This reference text presents the most recent and advanced research on the application of artificial intelligence and machine learning on intelligent systems. It will discuss important topics such as business intelligence, reinforcement learning, supervised learning, and unsupervised learning in a comprehensive manner.

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SMART MEASURING DEVICE FOR POWER WITH DIGITAL DEBITING SYSTEM USING MOBILE APPLICATION TOOL

Rajesh Sharma R. Gandhi R.; Sungheetha A.; Chinnaiyan R.; Deepaletchumi N.
4th International Conference on Innovative Practices in Technology and Management 2024, ICIPTM 2024

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Innovative Practices in Technology and Management (ICIPTM), International Conference

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Abstract

Recently, it has been discovered that the electricity department's significant income loss is a result of the metering and billing system. At every level of the billing process, errors can occur due to malfunctioning meters, processing faults when processing bills, or human error when recording meter readings. According to a few study estimates, 40% almost one-fourth of the electricity produced is either stolen or lost during transmission. A smart system for measuring electricity

can solve these issues. Designing a smart electricity meter with an Android-based payment system is the goal. We suggested a wireless IOT- based system for smart electricity meters and billing (Internet of Things). In line with the IOT idea, we also used relays to cut off an unpaid user's power supply, which was controlled wirelessly. Messages will be sent to users via cloud notification once reading has automatically occurred.
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Author keywords- billing system using IOT; Internet of Things; OCR operation; smart electricity meter



ENHANCING NETWORK SECURITY AGAINST APTS THROUGH SVM-BASED NETWORK TRAFFIC ANALYSIS: IDENTIFYING ANOMALIES IN COMMUNICATION FLOWS

Rathor K.; **Keerthika V.**; Sunanda K.; Renuga K.; Shobana A.; Anusuya M.

ICCDS 2024 - International Conference on Computing and Data Science 2024

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Computing and Data Science (ICCDS), International Conference on

Abstract

Nowadays, plastics have become an important product worldwide because of their manifold applications in commercial and industrial sectors comprising electronics, construction, automotive, healthcare, agriculture, and packaging owing to their remarkable physical and chemical properties. In recent years, the demand for plastics has grown significantly owing to their number of advantages, which include resistance to corrosion, sustainability, ease of use, production simplicity, and low cost. Based on their functionality, plastics can be easily modified to desired shape and color, and the large-scale production of plastics has increased drastically because of high community demand and worldwide industrial revolution. However, the excessive utilization of plastics and their nondegradable nature accompanies several environmental and health problems caused by poor waste management after utilization and negligence during the production of plastics. Municipal solid waste contains about 10% to 12% of residual plastic, which post-combustion releases the gases into the

environment, thereby increasing air pollution and causing green-house effects. In general, the poor disposal and ill-treatment of plastic waste affect animals, public health, and environmental pollution. The implications of plastic waste management on health and the environment are increasing day by day, particularly in developing countries, and therefore regulatory affairs dealing with environmental clearance and safety are employed. Thus, governments, municipal corporations, civil society, and territorial governance constitute various measures and legislative norms concerning environmental protection that can guide citizens to dispose of waste plastic after its use. Some examples of waste management strategies are recycling, incineration, bioremediation, and landfilling. These strategies are developed to ensure environmental safety, cleanliness, and efficient disposal of plastic waste. Thus, constituting accessible and efficient waste management policies is a cornerstone of sustainable development and environmental sustainability.

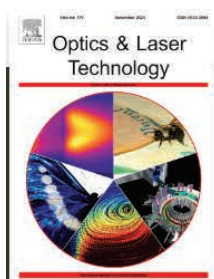


MONITORING OF THREE-DIMENSIONAL LIVE-CELL CULTURES USING A MULTIMODE, MULTISCALE IMAGING SYSTEM COMBINING CONFOCAL FLUORESCENCE MICROSCOPY AND OPTICAL COHERENCE MICROSCOPY

Ravichandran N.K.; Kim H.; Park J.; Hur H.; Kim J.; Bae J.Y.; Hyun S.; Kim I.J.; Kim D.U.; Lee S.-C.; Chang K.S.; **Muniraj I.**; Jeon J.S.; Nam K.-H.; Lee K.-S.

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Optics & Laser Technology

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8.5

CiteScore

4.6

Impact Factor

Abstract

Live-cell monitoring involves long-term observation and analysis of living cells in tissue cultures, which develop cells or tissues in an artificial environment and are essential for tissue engineering. Fluorescence microscopy (FM) is widely used as a monitoring tool owing to its powerful ability to visualize protein distribution within cells and tissues, thereby providing information on their functions in biological processes. To reduce the photobleaching effect, which is a major limiting factor in FM, FM is generally combined with other imaging modalities, such as phase contrast and differential interference contrast microscopy, which are nondestructive to fluorochromes, to selectively use fluorescence signals only in specific areas of interest within a sample. However, these methods are restricted to thin samples and cannot produce depth-resolved

images. Here, we propose a method to determine three-dimensional (3D) positions in volumetric samples for application in high-resolution 3D fluorescence imaging using a multimode and multiscale imaging system that combines optical coherence microscopy (OCM) and line confocal FM (LC–FM). We also demonstrate the benefits of multimodal imaging in 3D cell culture monitoring. To evaluate the performance of the proposed system and method, we rapidly and accurately located the regions of interest in 3D tissue culture models, such as tumor spheroids and microvascular bed, and instantaneously acquired volumetric high-resolution fluorescence images. We also used an integrated system to monitor tumor spheroids mixed with extracellular matrix (ECM) over five days of the culture process, and the FM–OCM

integrated technique successfully imaged the overall 3D structures, such as the distribution and boundaries of the spheroids and ECM as well as stained tumor cells. This complementary information is useful for	understanding the relationship between cellular behaviors, such as the proliferation and migration of tumor cells, and microenvironments, such as the ECM.
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Author keywords- Extracellular matrix; Fluorescence microscopy; Live-cell monitoring; Optical coherence microscopy; Tumor spheroid; Vascular organoid



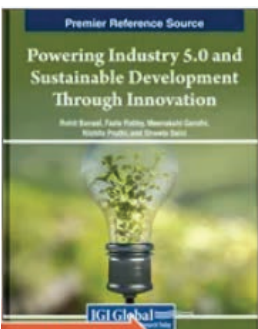
AN IN-DEPTH ANALYSIS OF INDUSTRY 5.0 IN NEXT-GEN MANUFACTURING AND DIFFERENTIATIONS FROM INDUSTRY 4.0

Sahoo A.K.; Alekhya V.; Raj V.H.; Kumar A.; **Shelke C.**

Powering Industry 5.0 and Sustainable Development Through Innovation Pages 154 - 169, 28 May 2024

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Powering Industry 5.0 and Sustainable Development Through Innovation

Rohit Bansal, Fazla Rabby, Meenakshi Gandhi, Nishita Pruthi, Shweta Saini

Release Date: May, 2024 | Copyright: © 2024 | Pages: 393

DOI: 10.4018/979-8-3693-3550-5

ISBN13: 9798369335505 | ISBN13 Softcover: 9798369350300 | EISBN13: 9798369335512

Abstract

The term “industrial revolution” refers to the change from old industrial methods to novel ones that were controlled by the technology of the day. Mechanization, electrical power, and automation drove the initial three industrial revolutions, which progressively converted the agricultural economy into one centered on manufacturing. It contributed to improving the standard of existence for industry employees and the medical sector as a whole. The results indicate a significant rise in manufacturing effectiveness of 1.52%, which can be ascribed to 36.2°C rising temperatures and

44.8% humidity reductions after adoption. A 0.76% rise in quality levels (93.1) for quality management was attributed to a reduction in faults discovered (2). Service procedures worked better, with 2.3 fewer hours of service and 52 mins of downtime. These findings demonstrate the practical benefits of combining IoT and AI in next generation manufacturing, positioning it at the forefront of the transformative environment of Industry 5.0 and enhancing output, excellence, and upkeep.
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CHARACTERIZATION OF NOVEL CELLULOSIC FIBER EXTRACTED FROM AGRO-WASTE OF RICINUS COMMUNIS PLANT FOR SUSTAINABLE GREEN COMPOSITE MATERIALS

Senthil Kumar P.; Sathishkumar T.P.; **Rajeshkumar L.**

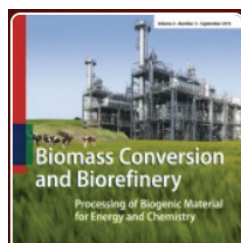
Biomass Conversion and Biorefinery 2024

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Biomass Conversion and Biorefinery

Processing of Biogenic Material for Energy and Chemistry

Publishing model

Hybrid

Abstract

Biowastes from agricultural and other industrial plants have been identified as potential fibers for the development of biocomposite materials for various industrial products. This study focuses on a novel cellulosic fiber extracted from the agro-wastes of *Ricinus communis* (RC) plant stem. The raw RC fibers extracted from the stems were separated by the manual retting process, dried, shortened, and alkali-treated with NaOH solution at varying percentages. Results portrayed that 4% treated fiber showed better characterization results. The physical characterization includes the density and the diameter of the RC fibers which are found to be in the range of 1.24 g/cc and 235 μ m respectively. Chemical characterization studies represent the changes in the composition of cellulose, wax, lignin, pectin, and hemicellulose from raw and chemically treated RC fibers due to alkaline treatment

for surface modification in the future development of biocomposite materials. Thermal analysis data showed that the biofibers were thermally stable in the range of 300 to 350 °C. The X-ray diffraction spectrum analysis showed almost the same crystallinity index for both raw and treated fibers in the range of 40%. The physical structure of raw and alkali-treated fibers was examined by scanning electron microscopy (SEM), also the elements of carbon, hydrogen, hydroxyl, and other chemical bonds were identified using FTIR spectroscopy, exhibiting the presence of required bio-composition. The tensile properties of the fibers were found to have a tensile strength of 428 MPa and Young's modulus of 9.89 GPa. The surface texture of the treated fiber had a higher roughness, which would result in higher reinforcement in polymer-based biocomposites. In addition, RC fibers are abundant

and can be potential, biodegradable, economical, and productive biofiber for developing sustainable green composite materials.

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Author keywords- FTIR spectroscopy; Ricinus communis fiber; Characterization; Cellulosic; SEM; TGA; XRD analysis



INFLUENCE OF DIGITAL TRANSFORMATION ON THE BANKING INDUSTRY

Sathwika B.; **Hameed A.**; Rajesh Sharma R.; Babu T.; Chinnaiyan R.; Sungheetha A.
4th International Conference on Innovative Practices in Technology and Management, ICIPTM 2024 Noida 21 February 2024 through 23 February 2024

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Abstract

The adoption of digital banking services is driven by factors like time-saving, convenience, accessibility, and security, influencing customer decisions. Many respondents use these services multiple times a week, with mobile and online banking identified as the most valuable digital offerings. Overall, customer satisfaction is high, though challenges such as technical issues, connectivity problems, limited functionality, security concerns, communication issues, and confusing user interfaces persist. Addressing these challenges is vital for enhancing the overall customer experience. While the perceived security level in digital banking is generally positive, continuous efforts are needed to bolster security measures and maintain customer trust. The impact of digital transformation on the

banking sector has led to improved convenience, time efficiency, and accessibility, significantly enhancing the overall banking experience. However, opportunities for further improvement exist, particularly in addressing technical issues, enhancing functionality, and providing clearer communication. In response to these findings, the banking industry is urged to prioritize investments in technology, security, and user experience. By addressing customer concerns, delivering seamless digital services, and fostering ongoing innovation, banks can maximize the advantages of digital transformation, ensuring a positive and satisfying banking experience for their customers.

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Author keywords- adoption factors; Digital banking; mobile banking; online banking; security; usage frequency



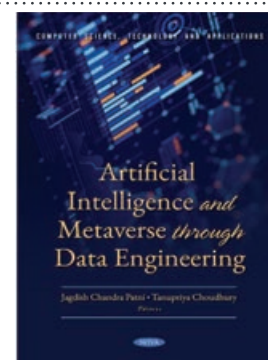
DATA INTEGRATION WITH ARTIFICIAL INTELLIGENCE

Savarkar K.; Pal O.P.; Patel P.; Maurya S.K.; **Patni J.C.**

Artificial Intelligence and Metaverse through Data Engineering Pages 199 – 224 ,
8 July 2024

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Abstract

The research in this chapter is driven by the hypothesis that integrating blockchain technology with artificial intelligence (AI) can significantly enhance data sharing, access control, and data integration. The identified problems within the existing literature include the need to address access control and privacy issues, ensure data integrity and consistency, facilitate emergency and healthcare-specific data sharing, and establish effective governance and compliance mechanisms. These problems have been addressed through innovative solutions, such as attribute-based access control, fine-grained access control, and decentralized sharing mechanisms, along with cryptographic methods and consensus algorithms to maintain data reliability. Furthermore, the integration of blockchain with AI, specifically in edge computing environments, has opened new avenues for cross-domain data sharing and secure data analysis. The research presented herein builds upon these prior works by focusing on the integration of AI, which has the potential to enhance the efficiency and intelligence of data processing in

the context of blockchain-based data integration. In comparison with the most current results, this research aims to contribute to the ongoing evolution of the field by exploring the synergies between blockchain and AI, potentially advancing the state of the art in data integration. The previous works lay a solid foundation, but the integration of AI brings an additional layer of intelligence to data processing, potentially enabling more informed decision-making and insights. This innovative approach may open up new possibilities for more efficient data sharing and integration in diverse domains, offering enhanced solutions to the problems of access control, privacy, data integrity, and governance. The current research strives to bridge the gap between blockchain and AI, offering a promising path towards a more comprehensive and intelligent approach to data integration and sharing, thereby addressing contemporary challenges in the field.

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Author keywords- Behavior; Cognitive Behavior; COVID-19; Educational System; HEI.; Intellectual; Lockdown Period; Pandemic; Pandemic; Skill



DATA ANALYSIS OF QUALITY OF EDUCATION AND COGNITIVE BEHAVIOR

Sekaran S.C.; Nandhini N.; Jansi Rani T.; **Senbagalli M.**

Social Determinants Trends in Cognitive Analysis of Healthcare Analytics Using Artificial Intelligence Pages 37 - 4819 June 2024

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The pandemic has distorted the educational system of both schools and colleges not only in India but all over the world. Because of the pandemic, the education system has transformed from traditional education into virtual education with the help of some online tools. The plenty of materials that are readily available on different educational-oriented online platforms are the most noticeable change in education due to the pandemic. The pandemic also made it translucent that nobody can replace the classical educational system. Throughout the COVID-19 epidemic, learners lacked experience with persistent digital instruction and learning. It also revealed that the epidemic had a devastating impact on

students' ability to study at tertiary institutions (HEIs). In the post-COVID-19 times, students are facing thoughtful difficulties such as abridged intellectual skills, over exposure, and addiction to the Internet and gadgets. This chapter investigates and evaluates the quality of education and cognitive behavior of students in an HEI in India, during and after COVID-19, using a survey conducted by the students in our institution to make descriptive statistics and correlation analysis. The result of this chapter exposed that there is a striking decline in students' cognitive performance after COVID-19.

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COMPACT 1D SELF-OPERATIONAL NEURAL NETWORKS WITH FEATURE INJECTION FOR GLOBAL ECG CLASSIFICATION

Sengottaiyan N.; Sathish Kumar S.; Sharma R R.; Sungheetha A.; Chinnaiyan R.; Hamsanandini S.

4th International Conference on Innovative Practices in Technology and Management, ICIPTM 2024 Noida 21 February 2024 through 23 February 2024

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Abstract

For solving problems in ECG classification readings for rhythm detection, a novel deep learning approach is presented in this paper. To capture important information about heart cycles like morphology and timing, a proposed technique integrates feature injection with a compact 1D Self-Operational Neural Network (Self-ONN). This allows for fluent and engaging data recording. With superior performance, the network surpasses current models in classification while maintaining minimal computational complexity. Its outstanding results are achieved through training with the MIT-BIH arrhythmias benchmark database. The network displays exceptional levels of accuracy, recall, and F1-score for normal segments (99%), supraventricular ectopic beats (82%), and ventricular ectopic beats (94%), demonstrating its remarkable

capabilities. Here study demonstrates the applicability of the approach in wearable ECG sensors for self-monitoring and early detection of cardiovascular diseases. The paper offers comprehensive insights into network architecture, data processing stages, as well as comparisons with current algorithms. The suggested approach outperforms others in terms of F1-score, accuracy, sensitivity, specificity, and positive predictive value when applied to various beat types. The report contains a computational complex analysis that emphasizes the compactness of the model and its importance in reducing the difference in performance between patient-specific and global ECG classification techniques.

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Author keywords- arrhythmias; cardiovascular disease; deep learning; ECGs; feature injection



A REVIEW ON SUSTAINABLE PROPERTIES OF PLANT FIBER-REINFORCED POLYMER COMPOSITES: CHARACTERISTICS AND PROPERTIES

Sathish M.; Radhika N.; Venuvanka N.; **Rajeshkumar L.**,
Polymer International 2024

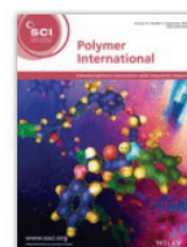
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**Polymer
International**



Edited By: Timothy Long
[JOURNAL METRICS >](#)



Abstract

Fiber-reinforced composites have emerged as versatile materials with applications spanning diverse industries, driven by their exceptional mechanical properties and lightweight nature. This review provides a comprehensive overview of natural fiber-reinforced composites, focusing on their enhanced mechanical and functional properties achieved through modern processing techniques. The study delves into various manufacturing methods, such as thermoforming, additive manufacturing, compression molding, electrospinning, pultrusion and autoclave molding, which have significantly contributed to the advancement of these composites. The review further investigates the

multifaceted properties of these composites, which highlights the versatility and applicability of these materials and provides a holistic understanding of their potential applications. Additionally, the work addresses current research gaps and identifies prospects, shedding light on the evolving landscape of natural fiber-reinforced composites. The synthesis of processing techniques, material properties and potential applications offers valuable insights for researchers, practitioners and industries aiming to harness the full potential of these sustainable and high-performance materials.

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Author keywords- emerging trends; fiber categories; modern techniques; plant-based fibers; property analysis



LEVERAGING CONSUMER TECHNOLOGY FOR HEALTHCARE SYSTEMS USING BLOCKCHAIN BASED BIO-SENSOR DEVICES

Shabaz M.; Rahman M.Z.U.; Alsaadi M.; Raparathi M.; Maaliw R.R.; Keshta I.; Soni M.; **Patni J.C.**;

IEEE Transactions on Consumer Electronics Pages 1-12024

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IEEE Transactions on Consumer Electronics

Information

Impact factor: **4.3** (2022)

ISSN: 0098-3063

The IEEE Transactions on Consumer Electronics (TCE) issues are released quarterly, with past editions accessible via the [Xplore site](#).

Abstract

Wireless biosensor devices have significantly enhanced level of convenience associated with patient treatment. Presently, most uncertified aggregate signature methods struggle to withstand key attacks that employ only specific keys. This paper presents an uncertified parallel key-isolated aggregate signature framework that utilizes blockchain technology in wireless medical sensor networks and biosensor devices for consumer electronics to tackle the challenges. The proximity of the signature verification and aggregation processes to end users is increased by integrating a bio-sensor device for consumer electronics into the cutting-edge framework. This action simultaneously enhances the safeguarding of patient confidentiality and mitigates computational

burden on primary cloud server. By integrating the advantages of key-isolated and uncertified technologies, the proposed solution circumvents exposure concerns, difficult certificate administration, and key storage. This study demonstrates that the proposed method is resistant to Type I, Type II, and wholly selected key attacks when implemented in a random oracle model. This scheme shows a reduction in calculation overhead of 82.97%, 74.03%, 84.58%, and 86.79% correspondingly when compared to other schemes. Analysis of performance indicates that in comparison to pertinent uncertified signature systems, this solution can reduce communication overhead by a minimum of 25% and computational cost by a minimum of 74.03%. IEEE

Author keywords- Communication Security; Consumer Electronic; Key Isolation; Privacy Protection; Wireless Bio-Sensor Devices

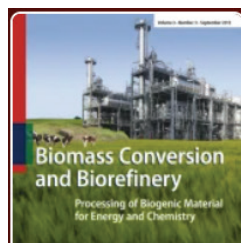


FLEXURAL BEHAVIOR OF EPOXY COMPOSITES REINFORCED WITH BANANA FIBERS IN DIFFERENT ARCHITECTURES: EXPERIMENTAL, ANALYTICAL, AND NUMERICAL APPROACHES

Shahapurkar K.; M. C K.; **Chenrayan V.**; Kanaginahal G.; Gebremaryam G.; Nik-Ghazali N.-N.; Kuan T.M.; Ariffin A.M.; Arunachalam A.; Fouad Y.; Soudagar M.E.M., *Biomass Conversion and Biorefinery* 2024

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Biomass Conversion and Biorefinery

Processing of Biogenic Material for Energy and Chemistry

Publishing model

Hybrid

Abstract

In the present investigation, banana fibers extracted from Ethiopia are utilized to fabricate the composites with different fiber architectures in the epoxy matrix. Six different types of composites—untreated/treated chopped banana epoxy composite (UCBEC/TCBEC), untreated/treated woven banana epoxy composite (UWBEC/TWBEC), and untreated/treated chopped banana woven banana epoxy composite (UCBWBEC/TCBWBEC)—are prepared with the hand layup technique. The prepared composites are subjected to three-point flexural tests to confirm the structural integrity. Flexural strength and modulus of all the composites were evaluated experimentally while numerical simulation was performed using finite element analysis (FEA) to validate the results. Experimental results showed that TWBEC (treated woven banana epoxy composite) composites attained an 11 to 25% higher flexural strength than other compositions due to fiber treatment and weaving

patterns. Additionally, the interaction between fiber and matrix was explored through appropriate theoretical modeling. Results inferred that full-oriented, continuous woven matting reinforcements increase shear strength while chopped fiber reinforcement has decreased shear strength due to discontinuity and higher aspect ratio. A scanning electron microscope was used to examine post-fracture surfaces to look into the failure process. The results of the numerical simulation are utilized in order to validate the findings of the study. The numerical results are in good agreement with experimental findings with a 5% accuracy loss. Finally, the outcomes of the present study are compared with those of previous research, presented in the format of a property map.

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Author keywords- Chopped banana fiber; Flexural modulus; Flexural strength; Interface shear strength; Woven banana fiber



INTRA-INDUSTRY TRADE IN TOURISM SERVICES IN EMERGING ECONOMIES: A STUDY OF INDIA AND BRICS COUNTRIES

Singh B.; **Biswas A,**

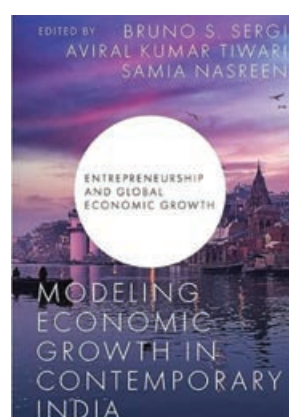
Modeling Economic Growth in Contemporary India Pages 281 - 29422 July 2024

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Modeling Economic Growth in Contemporary India (Entrepreneurship and Global Economic Growth) Kindle Edition

by Bruno S. Sergi (Editor), Aviral Kumar Tiwari (Editor), Samia Nasreen (Editor) | Format: Kindle Edition

[See all formats and editions](#)

Despite rapid economic growth, the Indian economy is facing numerous social and developmental challenges which are a major hindrance to sustainability. This volume of the *Entrepreneurship and Global Economic Growth* series sheds light on economic and social challenges, policy reforms, and future dynamics and solutions.

Modeling Economic Growth in Contemporary India focuses on core topics of economic disruption caused by the Covid-19 pandemic, changes in socio-cultural relationships, behavioural patterns and psychological attitudes governing human interaction, and government policies to stabilize the Indian economy and contribute to sustainable growth. Topics are explored such as macroeconomics, trade, manufacturing, agriculture and tourism to thoroughly examine the challenges to economic growth throughout India.

Scholars, researchers, policy makers and management practitioners will benefit from understanding the effects of the pandemic in economic and social well-being terms to facilitate growth and fuel sustainable development strategies in India.

Abstract

Since 1960s it has been realized that the bilateral trade at international level cannot be explained solely by the classical and neoclassical models of trade based on inter-industry trade. There is an existence of export and import within the same industry among the trading partners. Intra-industry trade (IIT) for products and product groups has been empirically observed by several studies. However, there is not much literature available on IIT in services. So also, from country perspective many studies are based on IIT for advanced countries. There is not much empirical evidence available for IIT among the emerging economies. The study aims to analyze the IIT in tourism services for five major emerging economies constituting BRICS - Brazil, Russia, India, China, and South Africa. The group

constitutes 41% of world population with 24% of world GDP and 16% share in world trade. The study used both static and dynamic approaches to measure the IIT between India and other BRICS nations between 2018 and 2020. To empirically estimate the IIT, the study employs Grubel and Lloyd index and Brulhart index (MIIT). The study reveals that India had a very high level of intra-tourism trade with Brazil and South Africa. While with China and Russian Federation it was moderate. Results denote a correlation between the theory of international trade and tourism. There is two-way trade in BRICS tourism flows.

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Author keywords- BRICS; Brulhart index (MIIT); Grubel and Lloyd index; Intra-industry trade (IIT); Intra-tourism



SHIP DETECTION IN SYNTHETIC APERTURE RADAR IMAGERY: AN ACTIVE CONTOUR MODEL APPROACH IN COMPUTER VISION DEEP LEARNING

Singh T.; **Babu T.**; Nair R.R.; Duraisamy P.,

*Procedia Computer Science Open Access Volume 235, Pages 1793 - 1802 2024 ,
2nd International Conference on Machine Learning and Data Engineering, ICMLDE
2023 Dehradun 23 November 2023 through 24 November 2023*

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Procedia Computer Science
Open access

Abstract

The utilization of Synthetic Aperture Radar (SAR) images for ship recognition holds significant importance within the realm of maritime surveillance and security. SAR images are useful for ship detection and recognition because they can penetrate through clouds and capture detailed information about ships, such as their size, shape, and orientation. In the context of ship recognition using SAR images, the primary objective is to employ automated methods for the identification and categorization of ships present in SAR imagery. The detection of ships in SAR images is a significant research area, but it remains challenging due to speckle noise, land clutters, and low signal-to-noise ratio. Researchers have developed various approaches to overcome this challenge, such as adaptive filtering, speckle reduction, and segmentation

techniques. Hence, a ship detection method is devised that combines the active contour method and the YOLO-v8 model using deep learning techniques. In the first step, the SAR images undergo pre-processing and normalization, and the model is trained with the backbone network. The YOLO-v8 model, renowned for its proficiency in object detection, is applied to delineate precise bounding boxes around ships within the images. The results obtained from experiments conducted on a variety of SAR images convincingly demonstrate that the suggested approach attains proficient ship target detection, striking a balance between accuracy and comprehensiveness. This approach represents a promising solution to enhance ship detection in challenging SAR scenarios.

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Author keywords- emerging trends; fiber categories; modern techniques; plant-based fibers; property analysis



ENHANCING ACADEMIC INTEGRITY IN ONLINE ASSESSMENTS: INTRODUCING AN EFFECTIVE ONLINE EXAM PROCTORING MODEL USING YOLO

Singh T.; **Nair R.R.**; Babu T.; Duraisamy P,

Procedia Computer Science Open Access Volume 235, Pages 1399 - 1408 2024

2nd International Conference on Machine Learning and Data Engineering, ICMLDE 2023 Dehradun 23 November 2023 through 24 November 2023 Code 199981

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Procedia Computer Science
Open access

Abstract

The issue of cheating during exams has become a significant concern, gaining widespread attention from the public and media. This issue has been made worse by the transition of educational institutions to an online format, making it simpler to engage in academic dishonesty. To overcome this problem, developed an innovative solution known as the Online Exam Proctoring Model using You Only Look Once (YOLO) Model. With the use of cutting-edge computer vision algorithms, the proposed model makes use of data from cameras and microphones to automatically spot and prevent cheating during online exams. Face orientation, face spoofing detection, mouth tracking, audio analysis, mobile device recognition, and person counting are among the primary elements built into the model. Object detection algorithms, in conjunction with pre-trained YOLO weights, empower the model

to detect mobile devices and count the number of individuals present in the exam environment. The automatic termination of exams upon detection of mobile devices, multiple persons, or no persons for 10 seconds acts as a strong deterrent against cheating. The suggested methodology created a reliable and effective tool for online examinations, guaranteeing the academic integrity and enabling impartial assessment of the skills and knowledge of learners. By implementing this solution, educational institutions can foster a secure online exam environment, promoting a culture of honesty and trust between students and educators. As navigate the evolving environment of education, the model stands as a reliable ally in upholding the credibility and authenticity of online learning experiences.

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Author keywords- Antispoofing; Mediapipe; Online Exam Proctoring; Pyaudio; You Only Look Once



BRAINNET: A DEEP LEARNING APPROACH FOR BRAIN TUMOR CLASSIFICATION

Singh T.; **Nair R.R.**; Babu T.; Duraisamy P,

Procedia Computer Science Open Access Volume 235, Pages 1399 - 1408 2024

2nd International Conference on Machine Learning and Data Engineering, ICMLDE

2023 Dehradun 23 November 2023 through 24 November 2023 Code 199981

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Procedia Computer Science

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Abstract

Cancer, regardless of its type, represents a formidable threat to human life and disrupts the delicate balance of normal bodily functions. Among the various forms of cancer, malignant brain tumors stand out as a leading cause of mortality in both adult and pediatric populations. The timely identification of these brain tumors is crucial for attaining precise diagnoses. Brain tumour identification and diagnosis are now made possible by the use of magnetic resonance imaging (MRI). However, the intricate and irregular shapes and locations of these tumors often pose challenges for complete comprehension. Typically, the expertise of neurosurgical specialists is required for the precise analysis of MRI scans. Unfortunately, in many developing countries, a shortage of skilled medical professionals and limited awareness about brain tumors compound the difficulties associated with obtaining timely and accurate MRI results. To address these

notable challenges, this research introduces BrainNet, an innovative Convolutional Neural Network (CNN) architecture specifically designed for the classification of brain tumors into distinct categories. The established transfer learning models VGG13, VGG19, VGG16, InceptionResV2, and Squeezenet, all of which were pretrained on the Imagenet dataset, are outperformed by BrainNet in both how well it handles these problems and how well it outperforms them. The performance of the BrainNet CNN architecture is particularly impressive, with a precision score of 94.75 percent and accuracy rates of 99.96 percent during training and 97.71 percent during testing. This accomplishment has the potential to significantly improve brain tumour diagnosis and classification, particularly in areas with limited access to medical resources and knowledge.

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Author keywords- Brain MRI scans; Brain tumor; Convolution Neural Network; Deep Learning; Transfer Learning



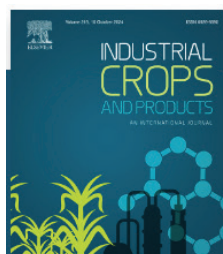
GREENING THE COMPOSITE INDUSTRY: EVALUATING LANTANA CAMARA VERBENACEAE FIBER AS A PROMISING SUBSTITUTE FOR LIGHTWEIGHT POLYMER MATRIX COMPOSITES

Somasundaram R.; Senthamarai Kannan P.; **Suyambulingam I.**; Kanthababu M.; Madhu G.M.; Siengchin S.

Industrial Crops and Products Volume 22015 November 2024 Article number 119265

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Industrial Crops and Products

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Abstract

Presently, researchers are engaged in investigations with the aim of developing novel products that exhibit biodegradability and subsequent environmental friendliness. As products, biofiber-based composites are gaining popularity in various industries. Consequently, this investigation successfully identified a unique cellulosic stem fiber from *Lantana camara* L. (Verbenaceae) plant. As the fiber was unique, sustainable, and abundantly available throughout all seasons, it was selected for the comprehensive characterization investigation to find its potential use as a lightweight bio-based composite material substitute for synthetic fibers. Physiochemical examination revealed that the *Lantana camara* Verbenaceae fiber had a greater cellulose concentration (61.23 ± 8.42 %) and density (1167 ± 60 kg/m³), measured to be very less compared to synthetic fiber, making a perfect choice for producing lightweight composites with higher

strength. The presence of cellulose I and the ordered character of the crystallites were verified by Fourier transform infrared spectroscopy and X-ray diffraction method. Thermogravimetric study showed the maximum degradation temperature of 323 °C, a thermal stability of 242 °C, and a kinetic activation energy of 66.11 kJ/mol. The maximum tensile strength, strain-to-failure percent, and Young's modulus were observed for 50-mm-length fibers. Detailed analysis of the longitudinal section of the fiber from atomic force microscopy and scanning electron microscopy study revealed that the fiber had a rough surface, which improves the bonding behavior when reinforced. The aforementioned properties showed that *L. camara* L. fibers are an excellent, greener alternative reinforcement for composite materials, allowing for the cleaner, more sustainable components.

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Author keywords- *Lantana camara* Verbenaceae fiber; Mechanical properties; Physiochemical analysis; Thermal analysis



EXPLORING METAVERSE LITERACY: IMMERSIVE TECHNOLOGIES IN LIBRARY ENVIRONMENTS

Subaveerapandiyan A.; **Baiju A.**; Ahmad N.; Verma M.K.; Sinha P.

Journal of Web Librarianship 2024

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Journal of Web Librarianship

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Abstract

This study aims to assess the familiarity, understanding, and perceptions of immersive technologies such as Virtual Environments (VEs), Augmented Reality (AR), and Virtual Reality (VR) among library professionals in India. It seeks to determine the importance of Metaverse literacy for librarians, explore their attitudes toward integrating Metaverse concepts into library services, identify potential benefits, and examine perceived barriers hindering the adoption of Metaverse technologies in libraries. A quantitative research approach was employed, involving a stratified random sampling method to gather data from library professionals across various universities and colleges in India. Familiarity with VEs, AR, and VR technologies was high, with mean scores above 4.0 for most

items, indicating respondents' strong interest and understanding. The importance of Metaverse literacy was emphasized, with high mean scores (above 4.2) on its significance for enhancing library services and user engagement. Critical barriers identified included cost (mean = 4.13), lack of expertise (mean = 4.01), and privacy concerns (mean = 3.51). The results underscore the need for targeted training programs and resource allocation to support adopting immersive library technologies. Adopting Metaverse literacy in libraries can help bridge the digital divide and promote digital inclusion.

© 2024 Subaveerapandiyan A, Arunima Baiju, Dr.
Naved Ahmad, Manoj Kumar Verma, Priyanka Sinha.

Author keywords- augmented reality (AR); digital inclusion; immersive technologies; Indian libraries; library professionals; library services; Metaverse; technology adoption; user engagement; virtual environments (VEs); virtual reality (VR)



EXPLORING THE RELATIONSHIP BETWEEN CARDIAC DISEASE AND PATTERNS OF 12-LEAD ECG THROUGH NEURAL NETWORK: A COMPREHENSIVE REVIEW

Sufiun A.; Chakraborty N.R.; Shammi S.A.; **Banshal S.K.**

Advances in Systems Science and Applications Volume 24, Issue 2, Pages 66 - 9315
July 2024

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Abstract

Heart disease is a significant public health concern, affecting a large number of people worldwide every day. With a shortage of qualified cardiologists, particularly in low-income countries, the diagnosis and management of heart disease can be challenging. The electrocardiogram (ECG) is the primary diagnostic tool for heart disease, but interpreting ECG reports requires the expertise of a qualified cardiologist, making it time-consuming and costly. To address this issue, automated ECG signal interpretation is necessary. Hence, this article has made an encyclopedic review of the existing literature. The article includes a demonstration of frequently utilized data sets, tools, and techniques for this domain. Therefore, a framework is proposed based

on the observation of existing works. The proposed framework aims to improve the analysis of ECG reports for both cardiologists and non-experts. Our framework considers the 12-lead ECG, the different types of leads, wave patterns, and their relationship with heart disease. The objective is to produce reliable and accurate results while reducing analysis time. The proposed framework is inherent in improve the diagnosis and management of heart disease by enabling a wider range of healthcare providers and individuals to interpret ECG reports. This could lead to earlier detection and treatment of heart disease, which could improve outcomes and save lives.

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Author keywords- Cardiac Disease; Deep Learning; ECG; Heart Disease; Machine Learning



ELECTRIC VEHICLE TECHNOLOGY STRUCTURE, INSTRUMENTATION AND CHALLENGES

Sundaram S.N.; Padmavathy N.S.; **Kumar M.H.**; Godfrey A.J.

Electric Vehicle Technology Structure, Instrumentation and Challenges Pages 1 - 18912 June 2024

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Abstract

This book explores critical technologies advancing electric vehicles' design, efficiency, and infrastructure. Across five chapters, the book examines crucial topics underpinning the ongoing EV revolution. The first chapter provides an extensive look at the development of electric vehicle infrastructure worldwide. It details various initiatives, policies, and progress across regions in establishing networks of EV charging stations. Discussion ranges from factors driving infrastructure rollout to optimal planning methodologies and equipment standards. Moving to vehicle systems, chapter two delves into hybrid electric vehicles (HEVs). It provides a comprehensive background on HEV configurations, working principles, control strategies, and design optimizations. The transformational potential of HEVs for sustainable transportation is also analyzed in depth. Regenerative braking forms the focus of chapter three. The technical discussion encompasses the design, control systems, energy recovery efficiency, battery wear impacts, and performance benefits of regen

braking in EV and HEV contexts. Comparative analysis is provided on different motor-based approaches. The pivotal role of civil engineering in enabling EV adoption forms the basis of the fourth chapter. Key integration opportunities are elucidated, from smart power grids to road construction suited for EVs. Civil engineers' knowledge base and skillsets toward advancing charging infrastructure is also covered. Finally, chapter five outlines battery management system technology for EVs. Guiding optimal battery usage, this system component plays an indispensable role in performance, efficiency, and safety. Parameter monitoring, charging control, cell balancing, and thermal management are aspects examined. Comprehensively addressing multiple technologies essential to the EV landscape, this book will benefit engineering professionals, researchers, and policymakers working to usher in sustainable electric transportation.

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POROUS POLYMERIC COMPOSITE: A NEXT-GENERATION MATERIAL FOR BIOACTIVITY, ENVIRONMENT, AND ENERGY

Talreja N.; Chauhan D.; Ashfaq M.

Application of Engineering Principles and Practices In Biotechnology Pages 145 - 1676 September 2024

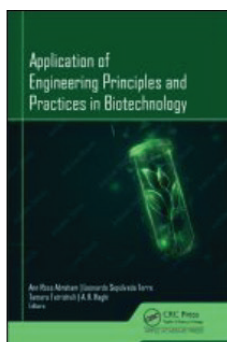
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Application of Engineering Principles and Practices in Biotechnology

Editors: Ann Rose Abraham, PhD
Leonardo Sepúlveda Torre, PhD
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Abstract

The porous polymeric composite materials provide numerous advantages due to their surface texture like high/selective permeability, high tensile strength/flexibility, and high surface area that makes them exceptional materials for various applications such as water treatments, filtration membranes, catalysis, sensors, and biomedical applications. Carbonbased-NMs (CB-NMs) such as graphene oxide (GO), graphene, carbon nanotubes (CNTs), carbon nanofibers (CNFs), and its hybrid materials are mostly applied in numerous applications. Moreover, these porous CB-NMs have been synthesized with tunable porosity

by changing their synthesis temperature. Another class of porous materials, metal/organic frameworks (MOFs), porous organic solids, and covalent organic frameworks (COFs), 146 are newly emerging materials with high porosity and are widely used for numerous applications. We mainly focus on different porous polymeric composite materials and their applications. Finally, discussed the role of porosity in environmental remediation, biomedical, energy, and solar cell applications.

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HARNESSING NOVEL TECHNOLOGIES TO FORTIFY ANTI-CORRUPTION EFFORTS: ASSIMILATING INDIA'S EXPERIENCES INTO UZBEKISTAN'S FIGHT AGAINST CRIMINALITY; [APROVEITANDO NOVAS TECNOLOGIAS PARA FORTALECER OS ESFORÇOS ANTICORRUPÇÃO: ASSIMILANDO AS EXPERIÊNCIAS DA ÍNDIA NA LUTA DO UZBEQUISTÃO CONTRA A CRIMINALIDADE]

Thommandru A.; Maratovich F.F.

Revista Brasileira de Políticas Publicas Open Access Volume 14, Issue 1, Pages 320 – 3392024

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Abstract

Corruption casts a long shadow over Uzbekistan's socio-political landscape, hindering economic growth and social harmony. To confront this formidable challenge, Uzbekistan seeks to draw upon India's extensive experience harnessing New Emerging Technologies (NET), such as the Digital India mission and the Unified Payments Interface (UPI), for effective anti-corruption measures. This paper conducts a comprehensive exploration of Uzbekistan's corruption landscape, unveiling the historical, cultural, and institutional factors fueling this pervasive issue. It delves into corruption's severe consequences on Uzbekistan's economy, governance, and society, underscoring the critical need for robust anti-corruption strategies. Leveraging India's proven insights, the paper meticulously dissects successful strategies

tailored to the Indian context, including strengthening anti-corruption laws, empowering agencies, fostering transparency, promoting accountability, and engaging civil society. Recognizing that combating corruption demands a multi-dimensional approach, it advocates a holistic strategy encompassing legal, institutional, societal, and cultural dimensions. Through comparative analysis, the research offers recommendations for Uzbekistan's anti-corruption arsenal. These include establishing specialized agencies, enacting comprehensive anti-corruption legislation, promoting transparency and accountability via digital platforms, and nurturing a culture of integrity through education and awareness initiatives. While acknowledging disparities between Uzbekistan and India, the paper underscores adapting strategies to

the local context through institutional capacity-building, international collaboration, and civil society engagement. Unwavering political commitment and leadership are stressed as pivotal. The integration of India’s experiential insights and strategic utilization of NET provide Uzbekistan a unique opportunity to confront pervasive corruption. By embracing these recommendations tailored to its

context, Uzbekistan can aspire to a more transparent, accountable, and corruption-free society – paving the way for sustainable development, good governance, and social justice.
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Author keywords- Anti-corruption; Criminoverse; Governance; Transparency; Uzbekistan



EVALUATION OF CONSUMER BEHAVIOR REGARDING FOOD DELIVERY APPLICATIONS IN INDIA

Titus R.; Babu T.; Nair R.R.; Sharma R R.; Chinnaiyan R.

4th International Conference on Innovative Practices in Technology and Management,
ICIPTM 2024Noida21 February 2024through 23 February 2024

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Abstract

This article investigates customer behaviour towards meal delivery apps, focusing on factors such as restaurant diversity, food packaging quality, application design, and user interface. According to the study, having a varied choice of eateries increases consumer happiness, which leads to more app usage. However, the quality of food packaging has no meaningful impact on overall satisfaction. Fortunately the study emphasises the importance of application design and user interface in influencing consumer behaviour. Both factors have

a substantial impact on overall happiness, with user-friendly interfaces attracting new users and encouraging frequent app usage. The findings highlight the necessity of organisations addressing these characteristics in order to improve customer satisfaction, increase app engagement, and create long-term client loyalty. Understanding and adapting to client preferences in these areas can help food delivery applications compete successfully.

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Author keywords- Application design; consumer behavior; food delivery apps; Food packaging quality; Restaurant variety; Satisfaction; User interface



UNVEILING CONSUMER ONLINE REVIEWS: AN IN-DEPTH ANALYSIS OF USES AND GRATIFICATIONS

Titus R.; Rajesh Sharma R.; Chinnaiyan R.; Sungheetha A.

4th International Conference on Innovative Practices in Technology and Management,
ICIPTM 2024Noida21 February 2024through 23 February 2024

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Innovative Practices in Technology and Management (ICIPTM), International Conference

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Abstract

This research scrutinizes the uses and gratifications linked with consumer online reviewing, recognizing the motivations driving individuals to share feedback in digital spaces. Recognizing the constraints of time, money, and expertise, as well as potential limitations in sample selection, the study acknowledges the possibility of a small sample size hindering generalizability to the broader population of online consumers. Despite these limits, the study intends to investigate several forms of online evaluations (positive, negative, and neutral) in order to uncover the underlying motivations for customers' participation in digital mechanisms for feedback. Furthermore, the research endeavors to explore the repercussions businesses may encounter when providing incentives for customer feedback.

While not considering the influence of different platforms or the specific stage of the purchasing process most affected, this study forms a foundational exploration into the multifaceted landscape of consumer online reviewing. By identifying and quantifying the components that impact consumer purchasing decisions, the research aims to shed light on the complex interplay between consumer motivations, online reviews, and business outcomes. This nuanced examination contributes to the existing body of knowledge in understanding the dynamics of online consumer behavior and provides valuable insights for businesses navigating the challenges and opportunities of the digital marketplace.

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Author keywords- Business Outcomes; Business Outcomes. ses and Gratifications; Consumer Online Reviews; Consumer Online Reviews; Digital Feedback; Motivations for Feedback Sharing; Online Consumer Behavior; ses and Gratifications



FUNCTIONAL METAMATERIALS FOR WIRELESS ANTENNA APPLICATIONS – A REVIEW ABETTED WITH PATENT LANDSCAPE ANALYSIS

Vetrichelvi G.; Gowtham P.; Balaji D.; **Rajeshkumar L.**

Heliyon Open Access Volume 10, Issue 1315 July 2024 Article number e34022

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Abstract

The communication network made the globe a single entity and easily accessible by everyone at any time. Growth in communication networks is unimaginable and advanced nowadays. It is growing every day by means of medium or components used in communication. There are various significant components that are generally used in communication networks. Specifically, wireless communication (WC) is the dominant in today's communication world. It is supported by the transmitting and receiving nodes at each end of communication. The common components in communication antennas are the transmitters and receivers. It has been unalterable for many decades, but their capabilities have been improved through various methods including their manufacturing by the use of alternative

materials. This article focuses on metamaterial (MM) based wireless antennas. The growth of metamaterials utilization in the fabrication of microstrip antennas has been discussed comprehensively and its future scope has been envisaged through patent landscape analysis. It is done meticulously using the patent database and in addition, the growth of some of the metamaterials was also predicted using the landscape analysis. Some significant technologies related with metamaterials in WC that were patented have been discussed comprehensively along with the reference to recently published articles. This article serves as a guide to the researchers working in the communication field to envisage the future advancements.

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Author keywords- Antennas; Metamaterials; Patent landscape; Wireless communication



BRAIN TUMOR DETECTION AND CLASSIFICATION USING ADJUSTED INCEPTIONV3, ALEXNET, VGG16, VGG19 WITH RESNET50-152 CNN MODEL

Wankhede D.S.; **J.shelke C.**; Shrivastava V.K.; Achary R.; Mohanty S.N.

EAI Endorsed Transactions on Pervasive Health and Technology Volume 1015 January 2024

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Abstract

Brain tumors have become a major global health concern, characterized by the abnormal growth of brain cells that can negatively affect surrounding tissues. These cells can either be malignant (cancerous) or benign (non-cancerous), with their impact varying based on their location, size and type. **OBJECTIVE:** Early detection and classification of brain tumors are challenging due to their complex and variable structural makeup. Accurate early diagnosis is crucial to minimize mortality rates. **METHOD:** To address this challenge, researchers proposed an optimized model based on Convolutional Neural Networks (CNNs) with transfer learning, utilizing architectures like Inception-V3, AlexNet, VGG16, and VGG19. This study evaluates the performance of these adjusted CNN models for brain tumor identification and classification using MRI data. The TCGA-LGG and The TCIA, two well-known

open-source datasets, were employed to assess the model's performance. The optimized CNN architecture leveraged pre-trained weights from large image datasets through transfer learning. **RESULTS:** The refined ResNet50-152 model demonstrated impressive performance metrics: for the non-tumor class, it achieved a precision of 0.98, recall of 0.95, F1 score of 0.93, and accuracy of 0.94; for the tumor class, it achieved a precision of 0.87, recall of 0.92, F1 score of 0.88, and accuracy of 0.96. **CONCLUSION:** These results indicate that the refined CNN model significantly improves accuracy in classifying brain tumors from MRI scans, showcasing its potential for enhancing early diagnosis and treatment planning.

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Author keywords- Brain Tumor; CNN; CNN-AlexNet; Inception-V3; MRI; Transfer Learning; VGG16; VGG19



OCIMUM SANCTUM LINN PLANT FERTILIZER AND INSECTICIDE SPRAYING SYSTEM WITH DISEASE PREDICTION USING MACHINE LEARNING

Agaash K.R.; **Ramalakshmi K.**; Venkatesan R.; Sundar G.N.; Nancy G.; Shirley S. *Proceedings of the 3rd International Conference on Applied Artificial Intelligence and Computing, ICAAIC 2024* Pages 743 - 746

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Abstract

An integrated system for spraying pesticides and fertilizers on plants, coupled with machine learning capabilities for disease prediction, revolutionizes crop management, transforming crop management. This innovative solution administers precise doses of nutrients and pesticides to optimize crop health autonomously. Leveraging CNN algorithms and image processing, it predicts diseases proactively, mitigating risks. By integrating machine learning into traditional practices, it enhances efficiency and sustainability in

terrace farming, tailoring care to each crop's needs.

Continuous monitoring allows real-time adjustment of

spraying, responding to changing conditions. The

system learns from extensive plant image datasets to

recognize disease patterns, empowering preemptive

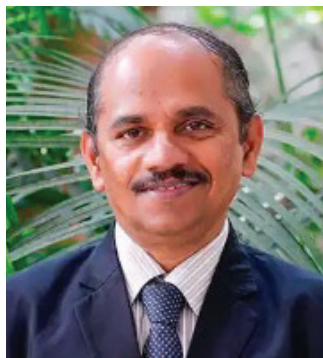
action. This proactive approach minimizes crop losses,

promotes sustainability, and improves yields in terrace

farming.

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Author keywords- Convolution neural networks (CNN); fertilizer spraying; image processing; pesticide spraying; Tulasi leaf disease prediction



INTEGRATED BLOCKCHAIN MODEL FOR PERSONAL IDENTIFIABLE INFORMATION SYSTEM (IBPIIS): A SECURE APPROACH

Achary R.; Raj S.; Shelke C.J., 2024

3rd International Conference for Innovation in Technology, INOCON2024

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Abstract

With the proliferation of information technology, the application of the Internet of Things (IoT) has gained momentum in various domains. This resource-constrained device is interfaced with many field devices to gather data, amounting to data for diverse applications. Securing this data either in a data store or in transition is an emerging area of research, that deals with the implementation of IoT Blockchain to maintain confidentiality and data integrity. This paper presents a network in which highly operational resources can be combined with blockchain to prevent data tampering. The proposed IBPIIS is a framework that integrates consensus method, authentication by

hashing, smart contract, and distributed management scheme, with smart devices and blockchain ecosystem to ensure security and information management. A comprehensive simulation is run under several scenarios on the system developed to analyze its performance in terms of time complexity and energy efficiency. This analysis also presents an improved blockchain-based Personal Identifiable Secure Management System to develop a data storage model that can efficiently handle the drawbacks of data redundancy and limited data storage space.

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Author keywords- 3 D Blockchain; Merkle Tree; Speech Synthesis; Speech-to-Text recognition; Word error rate



A MACHINE LEARNING-BASED PREDICTIVE MODEL FOR DRUG SENSITIVITY IN BREAST CANCER USING GENE EXPRESSION DATA

Alleema N.N.; **Choudhary A.**; Rajan S.N.; Kancharla R.; Kothari R.; Kumar R.
Blockchain and IoT Approaches for Secure Electronic Health Records (EHR) Pages
160 - 181

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Abstract

Through the combination of tool learning patterns, this study offers a novel strategy for personalised treatment for the majority of breast malignancies. The authors used a carefully assembled dataset that included 3444 cases of drug management data, affected person profiles, diagnostic scans, and scientific reviews to train artificial neural networks (ANN), support vector machines (SVM), decision trees (DT), and random forests (RF) for drug sensitivity prediction modelling. While SVM demonstrated its capacity to handle high-dimensional statistics with an accuracy of

96.5%, the artificial neural network (ANN) exhibited remarkable versatility, achieving a commendable accuracy rate of 97.5%. The interpretability inherent in decision trees (DT) and the combined energy of random forests (RF) added crucial elements to the multifaceted methodology. The outcome of the research underscores that the proposed machine learning model stands out with the highest efficacy in predicting the most accurate drug for a given patient.
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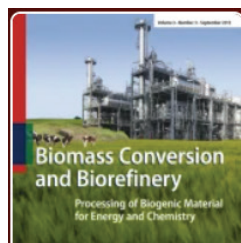


A MACHINE LEARNING-BASED PREDICTIVE MODEL FOR DRUG SENSITIVITY IN BREAST CANCER USING GENE EXPRESSION DATA

Alleema N.N.; **Choudhary A.**; Rajan S.N.; Kancharla R.; Kothari R.; Kumar R.
Blockchain and IoT Approaches for Secure Electronic Health Records (EHR) Pages
160 - 181

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Biomass Conversion and Biorefinery

Processing of Biogenic Material for Energy and Chemistry

Publishing model
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Abstract

In this study, the reinforcing effect of sugarcane bagasse and alumina micro-fillers on epoxy polymer composites' physical, mechanical, and thermal characteristics is reported. The design of the experiment as per central composite design-response surface methodology and artificial neural network scheme was chosen, in order to predict the optimal influence of sugarcane bagasse and alumina micro-fillers as 1.38 to 5.62 wt.%. From the analysis of variance outcomes, it was observed that sugarcane bagasse and alumina micro-fillers were essential to the mechanical characteristics. To maximize the flexural properties, the optimal contents of sugarcane bagasse and alumina micro-fillers were observed to be 3.5 wt.% and 3.5 wt.%, respectively. From the predicted

vs. actual, cook's distance, and residual graphs, it was observed that there is a better agreement between the developed model and experimental outcomes. Incorporating sugarcane bagasse and alumina micro-fillers in epoxy resin enhanced the physical, thermal, and mechanical characteristics. Scanning electron microscope examination of epoxy hybrid composite affirmed the uniform distribution of sugarcane bagasse and alumina micro-fillers in the epoxy matrix that affected the enhanced mechanical, physical, and thermal stability characteristics of the composite material.

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Author keywords- Alumina; Artificial neural network; Flexural characteristics; Response surface methodology; Thermal stability



HYBRID DEEP ARCHITECTURE FOR INTRUSION DETECTION IN CYBER-PHYSICAL SYSTEM: AN OPTIMIZATION-BASED APPROACH

Arumugam S.R.; **Paul P.Mano.**; Issac B.J.J.; Ananth J.P.
International Journal of Adaptive Control and Signal Processing 2024

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Latest issue
Volume 38, Issue 7
July 2024

Abstract

Intrusion Detection System (IDS) refers to the gear or software that monitors a network or system for malicious activity or policy violations. Periodically, the system records any intrusion action or breach, which frequently modifies the administrator. Cyber Physical System (CPS) is particularly called as networked connected system, in which the system components are spatially distributed and integrated via the communication network. The control mechanism ensures computation significance; however, the system does affect attacks. Researchers are trying to handle this issue via the existing anomaly datasets. In this way, this paper follows an intrusion detection system under three major stages including extraction of features, selection of feature, and detection. The primary stage is the extraction of Statistical features like standard deviation, mean, mode, variance, and median, as well as higher-order statistical features like moment, percentile, improved correlation,

kurtosis, mutual information, skewness, flow-based features, and information gain-based features. The curse of dimensionality becomes a significant problem in this scenario, so it is crucial to choose the right features. Improved Linear Discriminant Analysis (LDA) is utilized to choose the right features. The selected features are subjected to a Hybrid classifier for final detection. Here, models like CNN (Convolutional Neural Network) and Bi-GRU (Bidirectional Gated Recurrent Unit) are combined. A new Bernoulli Map Estimated Arithmetic Optimization Algorithm (BMEAOA) is added to train the system by adjusting the ideal weights of the two classifiers, leading to improved detection outcomes. Ultimately, the effectiveness is assessed in comparison to the other traditional techniques.

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Author keywords- cyber physical system; hybrid classifier; intrusion detection; optimization



ANALYZING THE DIGITAL TRANSFORMATION AND EVOLUTION OF FINANCIAL TECHNOLOGY (FINTECH) ACROSS VARIOUS INDUSTRIES

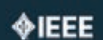
Babu S.K.; **Hameed A.**; Nair R.Rekha.; Babu T.; Sharma R Rajesh.; Chinnaiyan R.; Sungheetha A.

4th International Conference on Innovative Practices in Technology and Management 2024, ICIPTM 20242024

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Abstract

This study extensively examines the digital transformation and evolution of Fintech across diverse industries by analyzing literature, case studies, research papers, and expert opinions. The findings reveal a substantial impact of Fintech on various sectors, revolutionizing the financial services industry with enhanced accessibility, efficiency, and innovation. Disruption of traditional banking and payment systems is evident through online banking, mobile payments, and peer-to-peer lending platforms, fostering financial inclusion. Fintech's influence extends beyond finance, reaching retail, healthcare, insurance, investment, and small businesses, enabling seamless transactions and data-driven decision-making. Looking ahead, Fintech's

evolution, fueled by technologies like blockchain, artificial intelligence, and big data analytics, will continue shaping industries. Collaboration among startups, incumbents, regulators, and policymakers is crucial for harnessing these technologies sustainably. The study underscores the importance of understanding and embracing digital transformation and Fintech's evolution, emphasizing informed decision-making for a resilient, efficient, and inclusive economy. Ongoing research and collaboration are essential for navigating the evolving Fintech landscape and maximizing its positive impact on industries and society.

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Author keywords- Digital Transformation Industries; Disruption; Financial Services; intech; Mobile Payments; Online Banking



ENHANCING GAS LEAK DETECTION WITH IOT TECHNOLOGY: AN INNOVATIVE APPROACH

Babu T.; Nair R.R.; Kishore S.; Vineeth M. Procedia Computer Science Open Access Volume 235, Pages 961 - 969 2024 2nd International Conference on Machine Learning and Data Engineering, ICMLDE 2023

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Procedia Computer Science
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Abstract

The presence of a natural gas leak within a household carries the potential for fires and poses a risk of natural gas poisoning. Similar to how we approach other hazardous energy sources such as electricity and gasoline, it is crucial to exercise caution when dealing with natural gas exposure. To prevent potential hazards and dangerous situation, identified a smart gas detection system for rapid and accurate detection of gas leaks. The proposed gas leakage detection system combines advanced sensor technology, real-time monitoring, and automated alert mechanisms to ensure timely identification and response to gas leaks. The MQ2 sensor helps in detection of gas leakage. The MQ2 sensor possesses the capability to detect a wide range of gases, including methane, propane, carbon monoxide, and hydrogen. This versatility makes it an invaluable tool in ensuring safety and protecting against

potential hazards and early identification of gas leaks. The collected data is analyzed using sophisticated algorithms to distinguish between normal background gas levels and potential leaks. NodeMCU, equipped with its Wi-Fi capabilities, functions as the central control unit of the system. The NodeMCU gathers real-time data from the gas sensors, constantly monitoring gas levels. It processes this data and sends it to the cloud or a central server using its internet connection. The system's ability to monitor in real-time ensures that any gas leaks detected are quickly reported to the relevant personnel or authorities through automated alerts. The fast notification system allows for quick actions, reducing the risks of accidents, saving lives, preventing property damage, and mitigating harm to the environment.

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Author keywords- cyber physical system; hybrid classifier; intrusion detection; optimization



INNOVATIVE PRODUCT DEVELOPMENT: BRIDGING DESIGN THEORIES, CUSTOMER-CENTRIC APPROACHES, AND SUSTAINABLE PRACTICES

Bal S

A Textbook on Additive Manufacturing Technologies Pages 85 – 113, 17 June 2024

Dr. Sasmita Bal

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Abstract

This comprehensive chapter explores modern theories shaping product development and design. It delves into human-centric design methodologies like Design Thinking and User-Centered Design which emphasize empathy, prototyping, and usability. Other examined theories include Lean Product Development, emphasizing efficiency; Sustainable Design, prioritizing environmental impact; and Emotional Design, evoking emotional connections. Additional theories covered are Concurrent Engineering, accelerated through cross-disciplinary collaboration; Biomimicry, inspired by nature's designs; and Platform-Based Design enabling product families. The chapter also provides

an overview of process tools supporting development activities. Key concepts for understanding customer needs, generating concepts using structured ideation techniques, and modeling product metrics using simulations and analytics are discussed. Design considerations unique to additive manufacturing around topology optimization, surface finishing rules, print direction, and recycling closed loop systems highlight the convergence of robustness and eco-conscious principles.

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Author keywords- Additive manufacturing; Concept generation; Customer needs; Design theories; Product metrics



**ADVANCED MANUFACTURING TECHNIQUES: MODELING,
PRODUCTION METHODS, AND DIGITAL DATA PROCESSING**

Bal S

A Textbook on Additive Manufacturing Technologies Pages 85 – 113, 17 June 2024

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Abstract

Additive manufacturing (AM) enables several advantages in the automotive industry including design freedom, lightweighting, and distributed manufacturing. Current applications include rapid prototyping of components, 3D printed tooling like jigs and fixtures, and low-volume end-use parts production. AM enables parts consolidation and topology optimized lightweight structures. Mass customization of interiors is also possible through AM digital inventories

and on-demand printing. Metal AM processes are advancing to potentially allow structural component printing pending material property improvements. AM adoption faces challenges around repeatability, speed, and compliance, but continued progress will expand applications.

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Author keywords- Additive manufacturing; Automotive; Digital inventory; Lightweighting; Mass customization



AN IMPLEMENTATION OF MACHINE LEARNING-BASED HEALTHCARE CHABOT FOR DISEASE PREDICTION (MIBOT)

Bal S.; Jash K.; **Mandal Lopa.**,

Smart Innovation, Systems and Technologies Volume 373, Pages 419

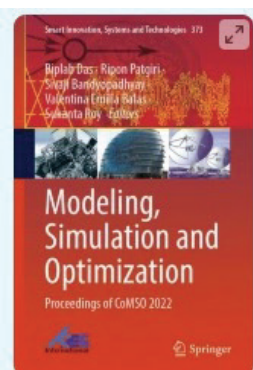
- 4302024 International Conference on Modeling, Simulation and Optimization, CoMSO 2022 Silchar

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Alliance University, Bangalore, INDIA



Modeling, Simulation and Optimization

Proceedings of CoMSO 2022

Conference proceedings | © 2024

Abstract

Every person needs health care for a good start to their life. But when it comes to health issues, it is extremely difficult to consult a doctor due to the pandemic situation. Now it is very difficult to consult with doctors or visit in hospital. Natural language processing (NLP) and machine learning concepts will be applied to the development of a chatbot application. With supervised machine learning, a chatbot system is proposed, which will provide disease diagnosis and treatment with detailed descriptions about different diseases before consulting with doctor. This proposed system provides

GUI-based text assistant that can communicate with bot like user-friendly. Bot will provide user symptoms and risk factor respective to user disease analgesics and also provides the best suggestion. The chatbot will also clarify when to see a doctor physically. The research indicates that this type of system is underused and that people do not know of its benefits. By using this free application, every individual will be able to avoid the expensive and time-consuming process of visiting a hospital. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2024.

Author keywords- Artificial intelligence; Chatbot; Health care; Machine learning



DETERMINANTS OF HATE CRIME AGAINST RELIGIOUSLY AND SOCIALLY MARGINALIZED GROUPS IN INDIA

Bhai Patel A.; **Kumar S.**; Sivakumar V.
Crime and Delinquency 2024

Dr. Sumant Kumar

Associate Professor,
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Alliance University, Bangalore, INDIA

Crime & Delinquency

Abstract

The cases of hate crime have been committed and are being committed against marginalized groups based on their caste, class, ethnicity, race, and religion. The hatred and discrimination have also arisen fear, insult, tension, and trolling among marginalized groups. The study aims to understand nature of hate crime in the socio-cultural context of India using the theoretical framework of social identity theory. The present study employs ontological textual analysis for examining hate crime. The data have been collected through various Indian newspapers. The cases of hate crime have been collected from year 2018 to 2020. The study reveals that a large portion of hate crimes stem from false information, rumors, and hate speech that are spread on social media platforms.

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Author keywords- Dalit; discrimination; fake news; minority; social identity theory



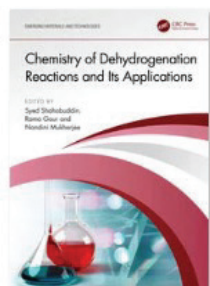
DEHYDROGENATION REACTIONS AND INSPIRATIONS FROM NATURE FOR THE SYNTHESIS OF BUILDING BLOCKS LEADING TO VALUED PHARMACEUTICAL COMPOUNDS

Bhansali P.R.; Praneeth V.K.K.; Viola R.E.,

Chemistry of Dehydrogenation Reactions and Its Applications, Pages 151 – 172, 1 January 2024

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Book

Chemistry of Dehydrogenation Reactions and Its Applications

Edited By Syed Shahabuddin, Rama Gaur, Nandini Mukherjee

Edition	1st Edition
First Published	2024
eBook Published	21 February 2024

Abstract

Pharmaceutical compounds are utilized for the diagnosis, treatment, and cure of a wide range of human ailments and are also used as additives utilized in the formulation of medications. Generally, these pharmaceutical compounds are complex organic molecules requiring multistep synthetic protocols for their assembly. Numerous classes of organic reactions have been developed and refined to produce the final target pharmaceutical compounds. The dehydrogenation reaction is one of the more widely utilized reactions to synthesize both the final

compounds and the intermediate building blocks that are utilized in the compilation of these drug molecules. In this review, these compiled different types of dehydrogenation reactions serve to make either drug intermediates or target pharmaceutical compounds. Additionally, this chapter discusses nature-inspired and enzyme-catalyzed dehydrogenation reactions including human metabolic reactions.

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DYNAMICS OF MUTUAL FUNDS IN RESPONSE TO MARKET CHANGES: A POST-COVID ANALYSIS (2019-2023)

Bhargava M.; **Hameed A.**; Babu T.; Rajesh Sharma R.; Chinnaiyan R.; Sungheeth A.,
*4th International Conference on Innovative Practices in Technology and Management
2024, ICIPTM 2024*

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Professor, Area Chair — Finance & Head Academic Operations,
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Abstract

Mutual funds serve as investment vehicles designed to mitigate risk by diversifying across various asset classes. Notably, the aftermath of the initial COVID-induced market crash in April 2020 has witnessed a substantial surge in retail investors, subsequently elevating trading volumes and influencing market prices. In evaluating the impact of NIFTY 50 on mutual funds, it is discerned that the correlation is relatively weak. Optimal mutual fund investments are characterized by a low portfolio beta coupled with above-average returns, ideally falling within the beta range of 0.5 to 1. Funds displaying minimal fluctuations may not respond significantly to

market downturns but also lack notable reactions to market upswings. Amid economic or national crises, investment products with a beta value near 0 emerge as favorable choices. The study, spanning from 2019 to 2023, encompassing the COVID era, reveals that numerous mutual fund houses have strategically realigned their investments toward safer asset classes to mitigate substantial losses. This strategic shift has implications for retail investors, influencing their investment outcomes during the observed period.

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Author keywords- Asset Diversification; COVID Era; Market Dynamics; Mutual Funds; Portfolio Beta; Retail Investors



ENHANCING EFFICIENCY AND ACCURACY IN ROBOTIC ASSEMBLY TASK PLANNING THROUGH TOOL INTEGRATION USING A HYBRID CLASS TOPPER OPTIMISATION ALGORITHM

Champatiray C.; Bahubalendruni M.V.A.R.; Mahanta G.B.; Truong Pham D.; Mahapatra R.N.,

Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2024

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Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science



Impact Factor: 1.8 / 5-Year Impact Factor: 1.9

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Abstract

Uncertainties in robotic assembly can substantially influence the quality of assembly task planning, often resulting in suboptimal solutions. It is crucial to account for these uncertainties when developing assembly task plans that are both efficient and practical for multi-part products. To address such issues, the proposed method integrates the NelderMead simplex algorithm with the Class Topper Optimisation Algorithm to create a hybrid NelderMead Class Topper Optimisation Algorithm. This study uses a vibration generator as an example to illustrate the application of the proposed method. Ensuring tool accessibility is emphasised, and the assembly tasks are initialised accordingly. The feasibility of these tasks is determined using liaison and

tool-integrated geometric feasibility predicate analysis. Multiple criteria are considered to achieve the most efficient robotic assembly task planning, including part reorientation, gripper or tool change and the energy required to assemble the part. The effectiveness and robustness of the proposed optimisation algorithm are demonstrated by comparing it with other algorithms, such as the teaching-learning-based algorithm, the genetic algorithm, the bees algorithm and the particle swarm optimisation algorithm. The results have shown that the proposed approach is highly effective for real-industrial relevant problems.

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Author keywords- assembly automation; Assembly task planning; hybrid Class Topper Optimisation Algorithm; Industry 4.0; robotic assembly; tool integrated assembly attributes



EXPERIMENTAL INVESTIGATION ON THE TENSILE, FLEXURAL, AND THERMAL RIGIDITY OF ALON-REINFORCED KEVLAR FABRIC-IMPREGNATED EPOXY COMPOSITES

Chenrayan V.; Shahapurkar K.; Muthusamy S.C.; Shanmugam S.K.; Zewdu G.A.; Arunachalam A.; Soudagar M.E.M.; Fouad Y.; Murthy H.C.A.

International Journal of Advanced Manufacturing Technology, 2024

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Abstract

Increasing demand for high-performance lightweight materials for structural applications poses a challenge to material research and development; subsequently, the expectation of a single lightweight material to sustain itself in a multi-functional environment is also difficult. The present research attempts to address the above-said issue by developing and examining the structural stability of aluminum oxynitride (ALON)-reinforced Kevlar fabric-impregnated epoxy composite. Three different weight percentages 5, 10, and 15 of ALON particles are employed to fabricate the composite sheet through the hand-layup technique. The novel inclusion of ALON particles in the resin-impregnated composite is expected to improve its structural stability. Tensile,

flexural, and dynamic mechanical tests are conducted to assess the improved structural stability conforming to standards. The results comprehend the significant improvement of 1.75 times in tensile, 2.59 times in flexural, and 1.28 times in damping characteristics for the higher composition of ALON particles compared to the ALON-free composite. The collective outcome of the study delineates that the novel composite is the right candidate for structural loading. The fracture study conducted through a scanning electron microscope reveals that the failure propagation is followed by collective delamination.

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Author keywords- Aluminum oxynitride; Dynamic mechanical analysis; Flexural strength; Kevlar fabric; Storage modulus; Tensile strength



PRECISION CULTIVATION FOR BONSAI THROUGH IOT IMPLEMENTED SMART IRRIGATION

Daniel V.; **Ramalakshmi K.**; Venkatesan R.; Sundar G.N.; Nancy G.; Shirly S.,
*Proceedings of the 3rd International Conference on Applied Artificial Intelligence and
Computing, ICAAIC 2024, Pages 1908 - 1913 2024*

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Abstract

This research study offers a novel use of Internet of Things technology to enhance and modify the growth environment for various bonsai trees, suggesting ways to maximize these plants' growth circumstances and provide a more flexible care schedule. The use of Internet of Things devices to automate and simplify the maintenance plan, ensuring that bonsai trees receive specialized care. These mechanical interventions are necessary because of the unique requirements of bonsai trees, which differ from regular indoor or outdoor plants. Certain factors that might significantly impact a bonsai's development, including as mugginess, temperature, and light, must be carefully considered during their development. This study

highlights the potential of IoT innovation in managing the complexities and outlines the unique problems involved in maintaining optimal conditions for bonsai trees. The proposed method aims to ease the process of cultivation for Bonsai enthusiasts by providing real-time observation and adjustments, promoting a more active and convenient means of developing these unique specimen of trees. The study's focus on automation advances the field of intelligent and adaptable agricultural methods by positioning IoT as a driving force in agriculture and highlighting the useful advantages for Bonsai maintenance.

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Author keywords- automation; Bonsai; growth environment; IoT



GUEST EDITORS' INTRODUCTION: DECOLONISING ACADEMIA

Das B.; **Dey S.**; Khoo S.-M.; Amoo-Adare E.,
Irish Journal of Sociology 2024

Dr. Sayan Dey

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Irish Journal of Sociology

Why decolonising academia again?

Engagements with decolonisation and decoloniality in the contexts of curricular and pedagogical transformations are not new. Several symposia, workshops, books, articles, and short pieces have engaged with this challenge, but still, the question remains: How to decolonise academia?

Whatever extent to which we engage with this phenomenon, it seems that it will not be enough. The moment we find a decolonial solution to a colonial knowledge-making problem, another challenge erupts. As a result, it is important to conceive the exercise of decolonising academia as an ongoing and inconclusive process. It is this insight that birthed this special issue on 'decolonising academia'.

This special issue has its origins in a symposium, held at Maynooth University on 27–28 October 2022, confronting urgent socio-political demands for academia to become more equitable, relevant, and transformative, while addressing challenges concerning knowledge hierarchies. The space and place where the symposium was conducted proved to be crucial context, as Maynooth University is a predominantly white, European cultural, and intellectual space. The symposium was a brief, two-day intervention, in which black, brown, coloured, and other non-white bodies and voices disrupted the colonial sanctity and linearity of academic spaces. Hopefully, this disruption will remain symbolically etched within academia's ideational and physical structures — its podiums, canteens, and corridors — on an ongoing basis.



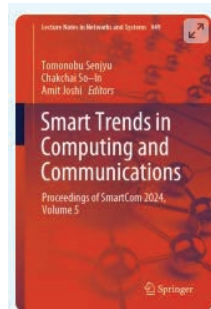
LIP-GEOMETRY FEATURE-BASED VISUAL DIGIT RECOGNITION

Debnath S.; Senbagavalli M.; Rajagopal R.

Lecture Notes in Networks and Systems, Volume 949 LNNS, Pages 397 - 406 2024
8th International Conference on Smart Trends in Computing and Communications,
Smart Com 2024

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Smart Trends in Computing and Communications

Proceedings of SmartCom 2024, Volume 5

Conference proceedings | © 2024

Abstract

One of the most prevalent and natural forms of expression is speech. The level of speech understanding can be increased by the human using visual clues like lip and tongue movements. Visual speech recognition is the act of understanding speech by seeing the speaker's motion of the lips. To recognize visual speech, shape or geometry-based characteristics extract the speaker's lip movement. This paper proposes a lip geometry-based visual feature for visual digit recognition. The lip geometry of a speaker is calculated using the Pseudo-Zernike Moment Invariant (PZMI). Artificial Neural Network (ANN) and Radial Basis Function Neural Network (RBF-NN) are used here

to recognize the speech for visual modality. The aim of the proposed work is to extract translation, rotation, and scale-invariant visual features. Moments invariant features are used in classification and recognition work as pattern-sensitive features. These features are proving discriminating properties for similar images which is very important for recognizing different visual speech. Because the accuracy of these futures has a significant impact on the classifiers used. The proposed system achieves 80% and 78.3% recognition accuracy using RBF-NN and ANN, respectively.

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Author keywords- ANN; Lip-geometry; PZMI; RBF-NN



PREFACE

Deshmukh K.; **Parameswaranpillai J.**

Waste Management: Methods and Applications, Open Access, Pages xv - xvi
January 2024

Dr. Jyotishkumar Parameswaranpillai

Professor & Director - Centre of Excellence (AU — Sophisticated Test and Instrumentation Center),
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Plastic Waste Management: Methods and Applications

Editor(s): Jyotishkumar Parameswaranpillai, Kalim Deshmukh

First published: 2 April 2024

Print ISBN: 9783527352142 | Online ISBN: 9783527842209

| DOI: 10.1002/9783527842209

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Abstract

Plastic Waste Management- Comprehensive resource on innovative and breakthrough developments in plastic waste management, covering a wide range of processing techniques and applications. Plastic Waste Management offers a complete guide to the best plastic waste management practices through recycling, incineration, landfill, and other processes, discusses applications of plastic waste management including energy generation, biochemical production, construction, and food packaging, covering current challenges relating to plastic waste, explaining the

sources of waste and their routes into the environment, and providing systematic coverage of plastic waste treatment methods, including mechanical processing, monomerization, blast furnace feedstock, gasification, and thermal recycling. The book also discusses different biodegradation mechanisms of plastic wastes and ecotoxicity and ecological Implications of marine plastic debris. From a cultural perspective, the book provides information regarding environmental and health implications, societal issues, and current challenges associated with plastic waste management.



CARGO CULTISM AND THE WHITENESS SYNDROME: FAKE INTERNATIONALIZATION OF PRIVATE UNIVERSITIES OF INDIA

Dey S.; Chakraborty A.

Journal of Applied Learning and Teaching Open Access Volume 7, Issue 12024

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Abstract

One of the many visions of the National Education Policy 2020 (NEP, 2020), is to make efforts to internationalize the higher education system of the country. The purpose of internationalization is to make sure that like the universities from Europe, the US, Australia and other white-centric geopolitical locations of the world, the universities in India can attain global distinctions in terms of rankings, publications, curriculums and pedagogies. However, the execution process is plagued with flawed, superficial and grossly researched policies. To explain further, the initiatives for internationalizing the higher education systems are being undertaken at a rapid pace and in uncritical ways. For example, the focus of internationalization is centered on private universities, with not much focus on government-run institutions. In the name of student and faculty exchange programs, the universities in India are being flooded with white academicians whose physical

visibility matters more than scholarliness. Their visibility on the university campuses is regarded as a potential marketing tool to initiate various forms of degree programs and motivate students to pay enormous amounts of registration fees. This opinion piece discusses how the project of internationalization of universities in India is engulfed with the phenomena of cargo cultism and whiteness syndrome. The arguments have been supported with personal conversations with two research participants from two private universities that are based in Noida and Hyderabad. Besides personal conversations, the arguments have also been supported by informal conversations with friends and colleagues and by analyzing photos, videos, and writings that are posted on social media by the university as markers of appreciation and success.

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Author keywords- Cargo cultism; internationalization; National Education Policy 2020 (NEP, 2020); privatization; whiteness syndrome

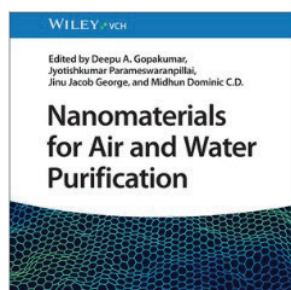


NANOMATERIALS FOR AIR AND WATER PURIFICATION

Gopakumar D.A.; **Parameswaranpillai J.**; George J.J.; Midhun D.C.D.,
Nanomaterials for Air and Water Purification Pages xv - xvi January 2024

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Nanomaterials for Air and Water Purification

Deepu A. Gopakumar (Editor), Jyotishkumar Parameswaranpillai (Editor), Jinu Jacob George (Editor),
Midhun Dominic C. D. (Editor)

ISBN: 978-3-527-35052-0 | February 2024 | 432 Pages

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Abstract

In *Nanomaterials for Air and Water Purification*, a team of distinguished researchers delivers an expert compilation of resources dealing with nano-based research for air and water remediation. The editors have included works by reputed researchers covering characterization, fabrication, and applications.

This book is intended as a primary reference for researchers in academia and industry to offer original insights into environmentally friendly polymers and their nanocomposites. It provides comprehensive discussions of the fundamentals, attributes, characteristics, and fabrication of the materials and composites relevant to these nanomaterials. Readers will also find:

- Thorough introductions to electrospun

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- Comprehensive explorations of photocatalytic materials and technologies for air purification
- Practical discussions of opportunities for improving and protecting water supplies with nanomaterials
- Fulsome treatments of polymeric membranes incorporated with metal or metal oxide nanoparticles for water purification

Perfect for environmental, polymer, and surface chemists, *Nanomaterials for Air and Water Purification* will also earn a place in the libraries of industry professionals with an interest in water and air purification.

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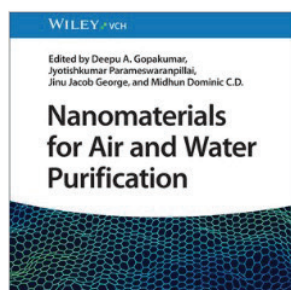


PREFACE

Gopakumar D.A.; **Parameswaranpillai J.**; George J.J.; Midhun D.C.D.,
Nanomaterials for Air and Water Purification Pages xv - xvi 1 January 2024

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Nanomaterials for Air and Water Purification

Deepu A. Gopakumar (Editor), Jyotishkumar Parameswaranpillai (Editor), Jinu Jacob George (Editor),
Midhun Dominic C. D. (Editor)

ISBN: 978-3-527-35052-0 | February 2024 | 432 Pages

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Content:

A comprehensive primary resource for researchers interested in nanocomposites for environmental remediation. In *Nanomaterials for Air and Water Purification*, a team of distinguished researchers delivers an expert compilation of resources dealing with nano-based research for air and water remediation. The editors have included works by reputed researchers covering characterization, fabrication, and applications.

This book is intended as a primary reference for researchers in academia and industry to offer original insights into environmentally friendly polymers and their nanocomposites. It provides comprehensive discussions of the fundamentals, attributes, characteristics, and fabrication of the materials and composites relevant to these nanomaterials.



ANALYZING THE LOW POWER TECHNIQUES IN SRAM CELLS AT 45NM NODE TECHNOLOGY

Dhariwal S.; Thomas A.K.; Korah R.; Manasi S.,

VLSI SATA 2024 - 4th IEEE International Conference on VLSI Systems, Architecture, Technology and Applications 2024

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Abstract

This paper presents Gated Vdd and MTCMOS techniques to achieve low power from the simulated static random-access memory (SRAM) cells. These techniques are implemented on 4 T, 5 T and 6 T memory circuits based on CMOS logic. A significant research work is already in progress in the field of electronics embedded with memory with low power technology for system on chip (SoC). One of the most popular memory cells is 6 T SRAM for microprocessor and micro controller architectures for low power applications. This research paper discusses CMOS based SRAM circuits and the parameters considered are power dissipation and delay. Along with 6 T, the

other two memory cells (4 T and 5 T) are also simulated with modifications of the low power techniques. Delay and power dissipation are analyzed for the conventional designs and modified designs with low power methodology. Low power techniques like Gated Vdd and MTCMOS (Multi Threshold CMOS), have been instrumental in reducing the power consumption at 45nm node technology. All the designs are simulated and compared to ponder on best outcome. Comparative analysis shows that the MTCMOS based SRAM cells (specially 6 T) represent overall a better choice for reduced power dissipation and delay.
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Author keywords- Gated Vdd; Low power techniques; MTCMOS; Power dissipation; SoC; SRAM



A COMPARATIVE ANALYSIS OF MACHINE LEARNING ALGORITHMS FOR CRIME RATE PREDICTION

Dileep A.; **Ramalakshmi K.**; Venkatesan R.; Sundar G.N.; Nancy G.; Shirley S..
Proceedings of the 3rd International Conference on Applied Artificial Intelligence and Computing, ICAAIC 2024, Pages 732 – 736, 2024

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Abstract

- This study presents a detailed analysis and framework utilizing machine learning techniques to understand the occurrences of crimes against women in India. The key methodologies include data preprocessing, feature selection, and model selection which would enhance the accuracy of the models. Various supervised learning algorithms such as logistic regression, naive Bayes, stochastic gradient descent, K-nearest neighbor, decision tree, random forest, and extreme gradient

booster have been used and compared to understand which algorithm would be the most capable. The findings and approach discussed in this study can be used to mitigate the risks, enhance victim support systems, and strengthen preventive measures to reduce crimes against women. This study would also contribute to combating gender-based violence and foster a safer and more inclusive environment for women in India.

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Author keywords- Gender-based Violence; Machine Learning; Predictive Modeling; Public Safety



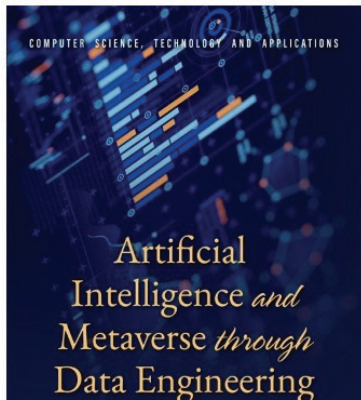
AI AND METAVERSE: EXPLORING THE INTERSECTION OF TECHNOLOGY AND VIRTUAL REALITY

Dimri P.; Chaudhary H.; Pal R.; Kukreti R.; Patni J.C.

Artificial Intelligence and Metaverse through Data Engineering Pages 79 – 108, 8 July 2024

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Artificial Intelligence and Metaverse through Data Engineering - Computer Science, Technology and Applications (Hardback)

Jagdish Chandra Patni (editor)

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Hardback
248 Pages
Published: 10/07/2024

Content:

Artificial Intelligence (AI) and Metaverse are two cutting-edge technologies that are shaping the future of human experience. The convergence of these two fields has the potential to revolutionize how we interact with virtual worlds and could have a significant impact on various industries. In this chapter, we explore the current state of AI and Metaverse technology and delve into the potential future implications of their integration. The beginning of the chapter provides a thorough introduction to both AI and Metaverse technology, discussing their history, current capabilities, and future potential. Later, we discuss the current use of AI within

Metaverse applications, such as virtual assistants, chatbots, and automated avatars. We also explore the potential for AI to enhance user experience and immersion within virtual worlds, through applications such as natural language processing, emotion recognition, and personalized content generation. Lastly, exploring the ethical considerations and potential risks associated with the use of AI in Metaverse environments.

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Author keywords- Artificial Intelligence; Augmented reality; Metaverse; Virtual reality



**OPTIMAL PORTFOLIO DISTRIBUTION UTILIZING MARKOWITZ’S
MODEL: AN INVESTIGATION OF 30 STOCKS IN THE SENSEX
INDEX**

Dinkar R.A.; **Hameed A.**; Babu T.; Nair R.R.; Chinnaiyan R.; Rajesh Sharma R.;
Sungheeth A.

*Proceedings of the 3rd International Conference on Applied Artificial Intelligence and
Computing, ICAAIC 2024, Pages 732 – 736, 2024*

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Abstract

Constructing an optimal portfolio proves to be a formidable task for both individual and institutional investors. This study employs Markowitz’s model to determine optimal portfolio allocation, focusing on 11 stocks within the Sensex index. Interestingly, the calculated optimal portfolio allocation selects only five out of the available 11 stocks. While various methods exist for computing optimal portfolios, each potentially yielding distinct weighted portfolios with different stock compositions, Markowitz’s Model stands out as a straightforward approach to determining

optimal portfolio weights. Despite the complexity of the portfolio construction process, Markowitz’s model provides a simple and effective means to arrive at the most advantageous allocation, streamlining decision-making for investors navigating the intricacies of portfolio optimization. The utilization of this model in the study offers insights into the composition of an optimal portfolio within the context of the Sensex, shedding light on the stocks deemed most favorable for inclusion based on the model’s calculations.

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Author keywords- Institutional investors; Investment strategy; Markowitz’s model; Optimal portfolio; Portfolio allocation; Sensex 30 stocks



RECRUITMENT AND HR IN TALENT ACQUISITION: BEST PRACTICES FOR HIRING TOP TALENT

Gadgil A.A.; Shanbhag S.S.; **Pachauri V.**

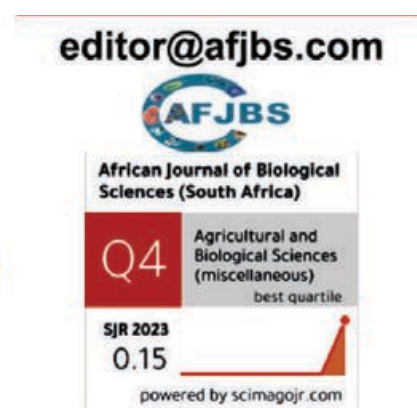
African Journal of Biological Sciences (South Africa) Volume 6, Pages 314 - 323 2024

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Editor-in-Chief : Dr. Eugene A. Silow
ISSN : 2663-2187
Frequency : Quarterly
Publication Format: Open Access
Language : English
Indexing/Listing : CABI Abstracts (CAB Direct)
Chemical Abstracts Service (CAS)
EBSCO
DOAJ
EBSCO Essentials



Abstract

Organizational talent acquisition strategies revolve around recruitment and HR functions. Attracting and maintaining top talent in today's highly competitive employment market is a daunting task, but it is essential for the success of any organization. In order to find the most qualified applicants who also share the company's values, culture, and goals for the future, it is critical to use efficient HR and recruitment methods. Recruiting top talent is about more than just filling open jobs; it's a calculated effort to find, attract, and develop the kind of brilliant minds that can boost an organization's creativity, output, and success. Therefore, human resources experts are crucial in forecasting and meeting short-term staffing demands while simultaneously laying

the groundwork for the organization's continued success in the future. As a result, HR experts and company executives are focusing on finding the best ways to recruit outstanding people. Crafting attractive job descriptions, leveraging corporate branding, developing strong screening processes, and delivering competitive remuneration and benefits packages are all part of the recruitment and HR lifecycle. The main goal of this research is to analyze effective best practices for hiring top talent acquired by HR & to understand recruitment & talent acquisition process by HR.
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Author keywords- Best Practices; HR; Recruitment; Talent Acquisition



AN ANALYSIS ON THE THREATS ON PUBLIC DATA COLLECTION

Garg S.; Verma K.K.; **Kumar G.**

2024 International Conference on Intelligent Systems for Cybersecurity (ISCS) (pp. 1-6). IEEE

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Abstract

This work discusses the critical aspects of data collection, addressing the importance of data collection and methodologies and emphasizing the importance of ethical consideration in the data collection process. The potential consequence of inadequately regulated data collection, citing real world examples like Twitter verses threads, the Cambridge Analytica scandal and Google Street view Wi-Fi collection incident. The survey analysis presented in this research work, it an increasing public

awareness of the importance of understanding and protecting personal data. During the survey carried out for research, the participants emphasized the necessity of stricter laws and better data security protocols. The escalating frequency of cybercrimes and the critical significance of protecting data make it prominent that government and private organizations must collaborate to build comprehensive data security system.

Author keywords- cybersecurity, cyberthreat, data privacy, survey, ethics



CONSTRUCTION OF BASIC MACHINES IN ADDITIVE MANUFACTURING TECHNOLOGIES

Gayathri V.; **Kumar M.H.**; Kumar G.H.; Girish B.M.

A Textbook on Additive Manufacturing Technologies, Pages 33 – 61, 17 June 2024

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Abstract

This chapter takes a deep dive into the essential components that make up additive manufacturing machines. It thoroughly examines critical elements like energy delivery, material delivery, nozzles, and heating systems, shedding light on their roles and importance in the additive manufacturing process. The exploration extends to the significance of optical and optoelectronic components, along with the role of CNC and process controllers in driving additive manufacturing technologies. Furthermore, the chapter investigates the environmental control systems

integral to the additive manufacturing process and highlights the relevance of rapid tooling equipment in this technological domain. The cumulative insights gathered throughout the exploration contribute to a holistic understanding of the intricate machinery central to additive manufacturing. In conclusion, the article underscores the interconnected nature of these components and their collective impact on the advancement of additive manufacturing technologies.
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Author keywords- Additive manufacturing; CNC controller; Machine components; Optoelectronic components; Rapid tooling equipment



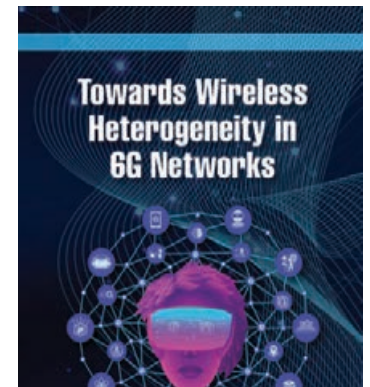
TOWARDS WIRELESS HETEROGENEITY IN 6G NETWORKS

George A.; **Murthy G.R.**

Towards Wireless Heterogeneity in 6G Networks Pages 1 - 2421 January 2024

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Abstract

The connected world paradigm effectuated through the proliferation of mobile devices, Internet of Things (IoT), and the metaverse will offer novel services in the coming years that need anytime, anywhere, high-speed access. The success of this paradigm will highly depend on the ability of the devices to always obtain the optimal network connectivity for an application and on the seamless mobility of the devices. This book will discuss 6G concepts and architectures to support next-generation applications such as IoT, multiband devices, and high-speed mobile applications. IoT applications put forth significant challenges on the network in terms of spectrum utilization, latency, energy efficiency, large number of users, and supporting different application characteristics in terms of reliability, data rate, and latency. While the 5G network development was motivated by the need for larger bandwidth and higher quality of service (QoS), 6G considerations are supporting many users with a wide application requirement, lowering network operating cost, and enhanced network flexibility. Network

generations beyond 5G are expected to accommodate massive number of devices with the proliferation of connected devices concept in connected cars, industrial automation, medical devices, and consumer devices. This book will address the fundamental design consideration for 6G networks and beyond. There are many technical challenges that need to be explored in the next generation of networks, such as increased spectrum utilization, lower latency, higher data rates, accommodating more users, heterogeneous wireless connectivity, distributed algorithms, and device-centric connectivity due to diversified mobile environments and IoT application characteristics. Since 6G is a multidisciplinary topic, this book will primarily focus on aspects of device characteristics, wireless heterogeneity, traffic engineering, device-centric connectivity, and smartness of application.

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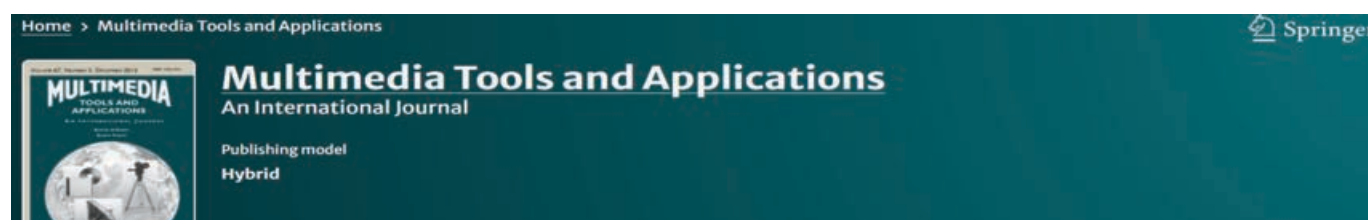
ARTIFICIAL INTELLIGENCE-BASED MACHINE LEARNING ALGORITHM FOR PREDICTION OF CANCER IN FEMALE ANATOMY

Ghantasala G.S.P.; Hung B.T.; Chakrabarti P.; R S.; Pellakuri V.

Multimedia Tools and Applications 2024

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Abstract

Breast and cervical cancers account for more than 85 percent of all cancer-related fatalities in developing nations, according to the World Cancer Research Fund. As a result, breast and cervical cancer have become one of the leading causes of mortality among women worldwide. This field is still in its infancy, with only a few studies in gynaecology and computer science looking into the detection of breast and cervical cancer. According to the researchers, medical records and early testing from individuals with breast and cervical cancer will be used in this study to determine the prognosis of those suffering from the diseases. To assess our cervical cancer predictions, we employed machine learning models such as Optimized Hybrid Ensemble Classifier (OHEC), which were trained on patient behavior and variables revealed to be associated with patient behavior. The datasets in this study have a substantial number of missing values, and the distribution of those values has been altered as a function of the missing values. OHEC classifier

performance has been shown to improve when the number of features is reduced and the problem of high-class imbalance is resolved, because the accuracy, sensitivity, and specificity of the classifier, as well as the number of false positives, were used to demonstrate the success of feature selection in the suggested model's predictive analysis. This has been demonstrated through the use of numerous tests involving categorization challenges. The study underscores the critical significance of early detection and prognosis in combating breast and cervical cancers, which remain leading causes of mortality worldwide. Through the utilization of machine learning models like the OHEC, the authors have demonstrated the potential for improved predictive accuracy and clinical outcomes. The findings highlight the importance of addressing challenges such as missing data and class imbalance in enhancing the performance of predictive models for effective cancer management strategies.



NONLINEAR DYNAMIC RESPONSE AND DAMPING PERFORMANCE OF THE VISCOELASTIC COMPOSITE CORE-BASED SANDWICH PLATES SUBJECTED TO BLAST LOAD

Gupta A.

International Journal on Interactive Design and Manufacturing, 19552513

DOI10.1007/s12008-024-01940-w

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International Journal on Interactive Design and Manufacturing (IJIDeM)

Publishing model
Hybrid

Abstract

The current work provides the comparative study based on nonlinear dynamic responses and damping performance of the viscoelastic core-based sandwich (SW) plates subjected to blast load. The 0–3 viscoelastic composite (VEC), pure/conventional viscoelastic material (VEM), and viscoelastic particulate composite (VEPC) are taken individually as the viscoelastic core within SW plate. The governing equation of motion (GEM) of the overall SW plate is formulated by following layer wise theory and fraction order derivative viscoelastic model in finite element framework. The numerical solutions are obtained by

solving the GEM with the conjunction of Newmark time integration scheme and direct iteration method. The effect of various boundary conditions, geometric parameters of 0–3 VEC, particulate volume fraction in VEPC are considered on dynamic responses and damping performance of SW plate. The numerical solutions disclose that 0–3 VEC and VEPC provide the significant damping compared to conventional VEM for passive damping control of SW plates subjected blast loads.

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Author keywords- Blast load; Finite element method; Nonlinear dynamic analysis; Passive damping control; Sandwich plates; Viscoelastic composites



DAMPING CAPABILITIES OF VISCOELASTIC COMPOSITES FOR ACTIVE/PASSIVE CONSTRAINED LAYER DAMPING OF THE PLATE VIBRATION: A COMPARATIVE STUDY

Gupta, Abhay, Panda, Satyajit, Reddy, Rajidi Shashidhar

Journal of Vibration Engineering and Technologies, ISSN 25233920 DOI 10.1007/s42417-023-00882-z

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Journal of Vibration Engineering & Technologies

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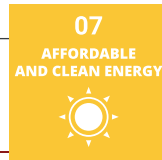
Abstract

Purpose: This work presents the comparative damping performance of conventional viscoelastic material (VEM), 0–3 viscoelastic composite (VEC), and viscoelastic particulate composite (VEPC) damping layers in the active/passive constrained layer damping mechanism for plate vibration. **Methods:** In the present study, passive and active–passive damping mechanisms, namely constrained layer damping (CLD) and active constrained layer damping (ACLD) are analysed to control the plate vibration. The CLD mechanism is achieved in both symmetric and asymmetric sandwich plate configurations where damping material lies at the core. In contrast, for the ACLD mechanism, the top face layer in the asymmetric sandwich plate is replaced by an extensional-mode piezoelectric actuator. A closed-loop finite element (FE) model is first derived for the damping analysis

of sandwich plates following the layer-wise first-order shear deformation theory and velocity-feedback control strategy for the ACLD mechanism. Subsequently, the utilization of the same FE model for damping analysis of the CLD mechanism of symmetric and asymmetric sandwich plates is demonstrated for each of the three kinds of damping layers. **Results and Conclusions:** The modal loss factors and frequency responses for each of the three kinds of damping layers in CLD/ACLD treated plates are estimated for the comparative study. The results reveal that damping performance of 0–3 VEC or VEPC layer in CLD/ACLD mechanism is significantly more than that for the conventional VEM layer. The VEPC layer may be used for the CLD mechanism in a symmetric sandwich configuration, while 0–3 VEC is a suitable one for the same damping mechanism through an asymmetric sandwich configuration. Moreover,

0–3 VEC may also be more suitable for the ACLD damping performance compared to VEPC.
mechanism due to the magnification in active–passive © Krishtel eMaging Solutions Private Limited 2023.

Author keywords- Active–passive hybrid damping; Constrained layer damping; Passive damping; Sandwich plates; Viscoelastic damping layer

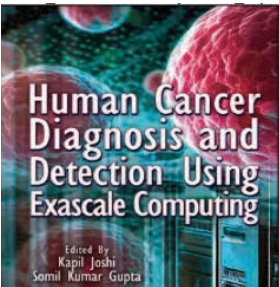


CURRENT BREAKTHROUGHS AND FUTURE PERSPECTIVES IN SURGERY BASED ON AI-BASED COMPUTING VISION

Gupta Suneet, Vanteru Madhu Kumar, Angadi Sanjeevkumar, Manikandan K. Tiwari, Mohit Dhanraj, Joshuva Arockia
Human Cancer Diagnosis and Detection Using Exascale Computing

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Human Cancer Diagnosis and Detection Using Exascale Computing

Kapil Joshi (Editor), Somil Kumar Gupta (Editor)
ISBN: 978-1-394-19768-2 | February 2024 | 336 pages

E-Book Starting at \$155.99	Print Starting at \$194.95	O-Book
☒ E-Book ☐		\$155.99

Abstract

Artificial intelligence (AI) and computer vision have become increasingly important in various fields of medicine, including surgery. AI-based computing vision systems have shown great potential in assisting surgeons during surgery, improving surgical outcomes, and reducing the risks of complications. In this abstract, we will discuss some of the current breakthroughs and future perspectives in surgery based on AI-based computing vision. One of the most significant breakthroughs in this field has been the development of image-guided surgery. Using preoperative imaging, AI-based computing vision systems can create a three-

layered guide of the patient’s life structures, allowing surgeons to accurately plan and execute surgical procedures. These systems can also help surgeons identify and avoid critical structures, such as nerves and blood vessels, during the surgery. Another breakthrough has been the development of surgical robots, which use AI-based computing vision to assist surgeons during procedures. These robots can provide high-resolution, 3D imaging and can be used to control surgical instruments with greater precision and accuracy than human hands.
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Author keywords- Artificial Intelligence (AI); Computing; Surgery; Vision



A COMPARATIVE STUDY REVEALING THE BEHAVIOURAL DIFFERENCE BETWEEN AUTISTIC AND HEALTHY ADULTS

Hariharan Divya, Banerjee Sri Krishna Jinnah Abdul Mohammed Ali, Banu Shaik Balkhis, **Ghantasala, G. S. Pradeep**

Proceedings of the 2024 10th International Conference on Communication and Signal Processing, ICCSP 2024 Pages 459 - 4632024

Dr. GGS Pradeep

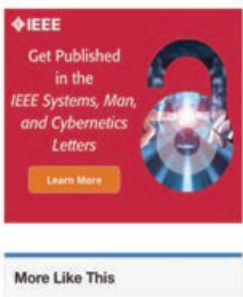
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A Comparative Study Revealing the Behavioural Difference Between Autistic and Healthy Adults

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Divya Hariharan ; Sri Krishna Banerjee ; Abdul Mohammed Ali Jinnah ; Shaik Balkhis Banu ; G S Pradeep Ghantasala All Authors

11
Full
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Abstract

Autism is a spectrum disorder whose most common characteristics are seen to be repetitive behavior, challenging social behavior, and difficulty in communication and speech. Many medically proven reasons seem to be prominent causes of autism but there is no definite treatment that has come in to light for people with autism. Autistic people predominantly face challenges related to language and communication. It's not that they are not able to speak but they find it quite difficult to speak and communicate. The present paper shows the autism spectrum disorder in focus on the

language and behavioral impairments that children with autism face. 2 groups of perfectly healthy and autistic individuals are taken in the study and aims to shed light on the difference in behavior in the two groups. The study highlights the behavioral impressions of autistic adult individuals. The results showed that autistic people are entirely different from normal people in terms of factors such as compensation, masking, and assimilation making them placed among the categories where they are needed to be treated under special care.



VALORIZATION OF JATROPHA CURCAS PLANT LEAVES FOR BIOPLASTICIZER: SYNTHESIS AND COMPREHENSIVE CHARACTERIZATION FOR FUTURISTIC APPLICATIONS

Kandan, Arunkumar Krishnasamy, Karthik **Suyambulingam**, Indran Siengchin, Suchart

Journal of Polymer Research

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Journal of Polymer Research

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Abstract

Nowadays, the focus of research is to alternate synthetic polymers with organic polymers. Most of the polymers need an additive called plasticizer to enhance the physiochemical properties of the polymer. Plasticizer is available synthetically in both liquid and solid state. There are only limited polymers available organically synthesized. Most of the synthetic polymers such as phthalates, ethylene glycol, oligomers, esters and etc., are derived from fossil fuels. These polymers provide good flexibility, mould ability, chain rotation, and softness of polymers. Without plasticizers the polymers get shrunk and become weak quality polymer. According to the use of plasticizer, in our study we focussed on organic plasticizer extraction from plant based materials. The plant that was used was Jatropha curcas, and its leaves have a high organic content. The

plasticizer was extracted chemically and characterized using FT-IR, TGA, scanning electron microscopy, atomic force microscopy, X-Ray diffraction and particle size analysis. The extracted plasticizer withstand up to temperature of 2900C. The high crystallinity index (48.76%) and the low crystalline size (19.6 nm) attained are required characteristics of plasticizer. The residual mass obtained in TGA was only 8%. The FT-IR analysis shows the presence of polyphenols, aromatic ring stretching. The elemental analysis shows the presence of higher percentage of oxygen and carbon which are main components of organic plasticizer. Compared to conventional non-biodegradable plasticizers, organic plasticizers are a great choice because they were made with natural and safe raw materials.

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Author keywords- Bio plasticizer; Biofiller; Biomass valorization; Biopolymer; Jatropha curcas



EMOTION RECOGNITION WITH A HYBRID VGG-RESNET DEEP LEARNING MODEL: A NOVEL APPROACH FOR ROBUST EMOTION CLASSIFICATION

Karthikeyan N, Madheswari K Umesh, Hrithik, **Rajkumar N**, Viji C- Salud, Ciencia y Tecnologia - Serie de Conferencias

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Published: 2024-03-06

Abstract

The recognition and interpretation of human emotions are crucial for various applications such as education, healthcare, and human-computer interactions. Effective emotion recognition can significantly enhance user experience and response accuracy in these fields. This research aims to develop a robust emotion recognition system by integrating VGG and ResNet architectures to improve the identification of subtle variations in facial expressions. This paper proposes a hybrid deep learning approach using a combination of VGG and ResNet models. This system incorporates multiple convolutional and pooling layers along with residual blocks to capture intricate patterns in facial expressions. The FER2013 dataset was employed to train and evaluate the model's performance. Comparative

analysis was conducted against other models, including VGG16, DenseNet, and MobileNet. The hybrid model demonstrated superior performance, achieving a training accuracy of 99,80 % and a validation accuracy of 66,17 %. In contrast, the VGG16, DenseNet, and MobileNet models recorded training accuracies of 54,27 %, 68,51 %, and 84,68 %, and validation accuracies of 46,58 %, 56,11 %, and 60,35 %, respectively. The proposed hybrid approach effectively enhances emotion recognition capabilities by leveraging the strengths of VGG and ResNet architectures. This method outperforms existing models, offering a significant improvement in both training and validation accuracies for emotion recognition systems.

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Author keywords- CNN; Deep Learning; Densenet; Emotion Detection; Hybrid Model; Image Classification; Mobilenet; Resnet; VGG16



A TEXTBOOK ON ADDITIVE MANUFACTURING TECHNOLOGIES (EDITED BOOK)

Kumar Mohit Hemanth, M.H. Bal Sasmita

A Textbook on Additive Manufacturing Technologies

Dr. Mohit Hemanth Kumar

Assistant Professor & Associate Director - Centre of Excellence (IPR Cell),
Alliance College of Engineering and Design,
Alliance University, Bangalore, INDIA



Abstract

Embark on a comprehensive exploration of additive manufacturing technologies with this informative text. Commencing with a thorough foundational overview, the book systematically introduces readers to the intricacies of additive manufacturing processes. Beyond rudimentary concepts, it delves into the meticulous construction of fundamental machines, providing readers with a nuanced comprehension of the machinery underpinning this innovative field. An engaging aspect of the book is its in-depth examination of the role played by Artificial Intelligence (AI) in optimizing additive manufacturing processes. Offering profound insights, the text elucidates how AI applications fundamentally transform the manufacturing landscape, enhance operational efficiency, and extend the boundaries of what is achievable in contemporary manufacturing. The scope of the book extends beyond technical details to encompass the realm of innovative product development. Readers are invited to explore the convergence of design theories, customer-centric approaches, and sustainable practices, discerning these elements' pivotal role in shaping the manufacturing

trajectory. A substantial focus is directed towards the strategic integration of reverse engineering and additive manufacturing. This section furnishes strategic insights into sustainable lifecycle management, providing readers with a strategic framework for navigating the future of these technologies. For those interested in advanced manufacturing techniques, the book thoroughly covers modeling, various production methods, and the intricacies of digital data processing. This comprehensive examination equips readers with a profound understanding of the latest advancements, preparing them to navigate the intricate landscape of modern manufacturing. This textbook stands as an invaluable resource for a student embarking on an exploration of additive manufacturing, a researcher seeking to deepen their knowledge base, or a professional in the field. It offers a holistic and detailed perspective on additive manufacturing technologies, providing a robust foundation for theoretical comprehension and practical application. Join the journey through the dynamic additive manufacturing landscape with this insightful and educational book.



BATTERY MANAGEMENT (BOOK PUBLISHED)

Kumar, Mohit Hemath, Mandol, Sourabh Girish B.M. Vamsi Krishna V.V.

Annapureddy, Vasavi Kumar, Rajesh

Electric Vehicle Technology Structure, Instrumentation and Challenges

Dr. Mohit Hemanth Kumar

Assistant Professor & Associate Director - Centre of Excellence (IPR Cell),
Alliance College of Engineering and Design,
Alliance University, Bangalore, INDIA



Abstract

This book explores critical technologies advancing electric vehicles' design, efficiency, and infrastructure. Across five chapters, the book examines crucial topics underpinning the ongoing EV revolution. The first chapter provides an extensive look at the development of electric vehicle infrastructure worldwide. It details various initiatives, policies, and progress across regions in establishing networks of EV charging stations. Discussion ranges from factors driving infrastructure rollout to optimal planning methodologies and equipment standards. Moving to vehicle systems, chapter two delves into hybrid electric vehicles (HEVs). It provides a comprehensive background on HEV configurations, working principles, control strategies, and design optimizations. The transformational potential of HEVs for sustainable transportation is also analyzed in depth. Regenerative braking forms the focus of chapter three. The technical discussion encompasses the design, control systems, energy recovery efficiency, battery

wear impacts, and performance benefits of regenerative braking in EV and HEV contexts. Comparative analysis is provided on different motor-based approaches. The pivotal role of civil engineering in enabling EV adoption forms the basis of the fourth chapter. Key integration opportunities are elucidated, from smart power grids to road construction suited for EVs. Civil engineers' knowledge base and skillsets toward advancing charging infrastructure is also covered. Finally, chapter five outlines battery management system technology for EVs. Guiding optimal battery usage, this system component plays an indispensable role in performance, efficiency, and safety. Parameter monitoring, charging control, cell balancing, and thermal management are aspects examined. Comprehensively addressing multiple technologies essential to the EV landscape, this book will benefit engineering professionals, researchers, and policymakers working to usher in sustainable electric transportation.



INTRODUCTION TO ADDITIVE MANUFACTURING TECHNOLOGIES (BOOK CHAPTER)

Kumar Mohit Hemanth Vamsikrishna V.V.V. Mandol Sourabh Kumar, Rajesh
A Textbook on Additive Manufacturing Technologies

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A NOVEL APPROACH TO DETECT, ANALYZE AND BLOCK ADVERSARIAL WEB PAGES

Kumar M. Ranjith Naik Darshana A. Kapila Neha Mohan Chinnem Ram Prasad Ch Raghava **Shelke Chetan** Rao C. V. Guru
International Journal of Information Technology (Singapore)

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International Journal of Information Technology

An Official Journal of Bharati Vidyapeeth's Institute of Computer Applications and Management

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Abstract

The phenomenon of distraction is very common, and its adverse effects are seen among people. The major cause underlying this issue is the ease with which adversarial web sites and web pages can be accessed. It is of utmost importance to locate, evaluate, and actively block such web pages in an effort to comprehensively and globally solve this societal issue. Thus, the given paper proposes an extension or plug-in to detect, analyze, and block websites smartly. The proposed approach takes keywords entered by the user as input into consideration, which eventually leads to the generation of web pages and web links. The filtering of web links is done by the proposed extension, followed by the extraction of features, the

utilization of support vector machines (SVM) for binary classification, and the summarization of textual data using natural language processing (NLP). Lastly, the precise results corresponding to relevant web links are presented to the users, which will increase their productivity, thereby reducing their distraction levels under all working circumstances. The performance of the proposed approach is validated against existing recent studies based on evaluation metrics such as adversarial website detection time (ms) and accuracy (%).

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Author keywords- Adversarial web pages; Distraction; Natural language processing (NLP); Support vector machine (SVM); Text summarization

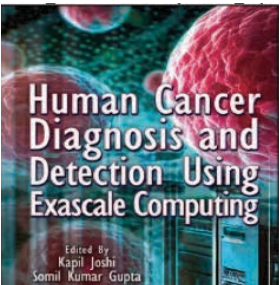


EVALUATING THE IMPACT OF HEALTHCARE 4.0 ON THE PERFORMANCE OF HOSPITALS

Kumar Pramod, Maurya Nitu, **Keerthiraj**, Krishna Somanchi Hari, Manoharan Geetha, Bharti Anupama
Human Cancer Diagnosis and Detection Using Exascale Computing

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Human Cancer Diagnosis and Detection Using Exascale Computing

Kapil Joshi (Editor), Somil Kumar Gupta (Editor)
ISBN: 978-1-394-19768-2 | February 2024 | 336 pages

E-Book	Print	O-Book
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Abstract

Artificial intelligence (AI) and computer vision have become increasingly important in various fields of medicine, including surgery. AI-based computing vision systems have shown great potential in assisting surgeons during surgery, improving surgical outcomes, and reducing the risks of complications. In this abstract, we will discuss some of the current breakthroughs and future perspectives in surgery based on AI-based computing vision. One of the most significant breakthroughs in this field has been the development of image-guided surgery. Using preoperative imaging, AI-based computing vision systems can create a three-

layered guide of the patient's life structures, allowing surgeons to accurately plan and execute surgical procedures. These systems can also help surgeons identify and avoid critical structures, such as nerves and blood vessels, during the surgery. Another breakthrough has been the development of surgical robots, which use AI-based computing vision to assist surgeons during procedures. These robots can provide high-resolution, 3D imaging and can be used to control surgical instruments with greater precision and accuracy than human hands.

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THE EFFECTS OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ON PEDAGOGY AND STUDENT LEARNING OUTCOME IN HIGHER EDUCATION

Kumar Sunil, Priyanka

EAI Endorsed Transactions on Scalable Information Systems ISSN 20329407 DOI
10.4108/eetsis.4629

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EAI Endorsed Transactions on Scalable Information Systems

Abstract

Pedagogical strategies and student learning outcomes have undergone a fundamental transformation because of higher education implementing information and communication technology (ICT). This research paper explores the varied impact of ICT on pedagogy and its correlation with student learning outcomes in higher education institutions. Through a comprehensive analysis of relevant literature, empirical studies, and case examples, this study examines the ways in which ICT has reshaped traditional teaching methods and influenced student achievement. The paper begins by investigating the adoption of digital learning platforms, blended learning models, and online assessment tools in higher education settings. It delves

into the role of ICT in facilitating personalized and interactive learning experiences, promoting student engagement, and fostering critical thinking skills. This work adds to the current conversation on how higher education is changing in the digital age and provides useful suggestions for instructors, administrators, and legislators who want to maximise the use of ICT in the classroom.

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Author keywords- Higher Education; ICT; Learning Outcomes; Teaching Pedagogy



DOES THE WTO TRADE FACILITATION AGREEMENT ACTUALLY PROMOTE INTERNATIONAL TRADE? A STRUCTURAL GRAVITY ANALYSIS

Kumari Mamta

International Trade Journal ISSN 08853908 DOI 10.1080/08853908.2024.2310036

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The International Trade Journal

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Publishes research on aspects of international trade such as international regimes and open economy macroeconomics.

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Abstract

Trade theories implicitly explain the significance of trade facilitation (TF) in increasing trade. Identifying the methodological gaps in the literature, this study assesses the effects of TF on international trade relative to internal trade under a theoretically consistent structural gravity model. The results suggest that countries' improved TF performance increases their agriculture and manufacturing trade. However, the

ratification of the trade facilitation agreement (TFA) does not affect trade. The study observes differential effects of various dimensions of TF. Moreover, heterogeneity in the TF effects is found across different industries. These findings encourage countries to implement TF measures more seriously.

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Author keywords- International trade; intranational trade; structural gravity model; trade facilitation; WTO



ENHANCING DEEP LEARNING FOR AUTISM SPECTRUM DISORDER DETECTION WITH DUAL-ENCODER GAN-BASED AUGMENTATION OF ELECTROENCEPHALOGRAPH DATA

Lalli K, Senbagavalli M

Salud, Ciencia y Tecnologia - Serie de Conferencias ISSN 29534860 DOI

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Published: 2024-03-06

Abstract

Autism Spectrum Disorder (ASD) is a general neurodevelopmental condition that requires early and accurate diagnosis. Electroencephalography (EEG) signals are reliable biomarkers for ASD detection and diagnosis. A recent Deep Learning (DL) model called Resting-state EEG-based Hybrid Graph Convolutional Network (Rest-HGCN) has been developed for this purpose. However, a challenge in ASD diagnosis is the limited availability of EEG data, leading to imbalanced classes and ineffective model training. To address this issue, a new approach is proposed in this paper, which involves a generative model for EEG data augmentation. A novel Dual Encoder-Balanced Conditional Wasserstein Generative Adversarial Network (DEBCWGAN) is designed to produce fine synthetic minority-class EEG examples and augment the original training dataset. This model integrates the Variational Auto-Encoder (VAE) and balanced conditional Wasserstein GAN. Initially, EEG signals for ASD in the training dataset are pre-processed as

Differential Entropy (DE) features and split into different segments. Each feature segment is processed in the temporal and the spatial domain depending on the electrode place. Then, twin encoders are trained to capture both spatial and temporal information from these features, concatenate them as Latent Variables (LVs), and provide them to the decoder to produce synthetic EEG examples. Additionally, gradient penalty and L2 regularization are used to speed up convergence and prevent overfitting effectively. Further, the augmented dataset is used to train the Rest-HGCN for ASD detection, enhancing its robustness and generalizability. Finally, test outcomes demonstrate that the DEBWGAN-GP-Rest-HGCN on the EEG Dataset for ASD and ABC-CT dataset achieves 91,6 % and 88,1 % accuracy, respectively compared to the Rest-HGCN, AlexNet, K-Nearest Neighbor (KNN) and Support Vector Machine (SVM).

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Author keywords- International trade; intranational trade; structural gravity model; trade facilitation; WTO



INNOVATION IN SMART GRIDS AND E-MOBILITY ECOSYSTEM
(BOOK CHAPTER)

Mahapatra Sheila, Raj Saurav, Babu Rohit, Shekarappa G. Swetha
A Sustainable Future with E-Mobility: Concepts, Challenges, and Implementations
ISBN 979-836935249-6, 979-836935247-2 DOI 10.4018/9798369352472.ch001

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Innovation in Smart Grids and E-Mobility Ecosystem
Sheila Mahapatra, Saurav Raj, Rohit Babu, G. Swetha Shekarappa
Source Title: A Sustainable Future with E-Mobility: Concepts, Challenges, and Implementations
Copyright: © 2024 | Pages: 15
DOI: 10.4018/979-8-3693-5247-2.ch001

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Abstract

The prevalent grid infrastructure enabled with progressive digital technologies, interfaced with artificial intelligence and smart sensors, paving the way towards bidirectional electricity flow is a smart grid. The existing complexity of power network coupled with the integration of stochastically driven renewables and a drive towards e-mobility eventually makes the evolution towards smart grid extremely pivotal. It is inimitable that advancement in smart grids is essential to operate the power system with enhanced efficiency

and cater to system security, reliability, and resiliency. E-mobility is another future-driven technology which is being emphasized across the globe for reducing carbon footprints and propelling towards a sustainable eco-system. The chapter will highlight the coordination between smart grid and e-mobility, overview of integrating renewables and development of energy storage systems, key aspects of e-mobility by applying different solutions.
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AMERICAN OPTIONS: A FRACTIONAL-ORDER BLACK-SCHOLES MERTON APPROACH WITH NEURAL NETWORK

Maitra Sarit, Arora Kapil

Proceedings 2nd International Conference on Advancement in Computation and Computer Technologies, In CACCT 2024 Pages 7 - 12
2024 2nd International Conference on Advancement in Computation and Computer Technologies, In CACCT 2024 Gharuan 2 May 2024 through 3 May 2024 Code 20015

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InCACCT-2024

2ND INTERNATIONAL CONFERENCE ON ADVANCEMENT IN COMPUTATION & COMPUTER TECHNOLOGIES
 TECHNICALLY SPONSORED BY IEEE DELHI SECTION WITH RECORD NO: 61598 XPLORE COMPLIANT: 979-8-3503-7131-4



Abstract

The Black-Scholes-Merton model (BSM) is frequently used to evaluate the fair price of a call or put option based on volatility (σ), option type (C), underlying price (S_t), period (t), strike price (K), and risk-free rate (r). However, the model faces challenges in capturing dynamic market conditions. To overcome this problem, this study introduces an integrated approach that integrates Fractional Order BSM (FOBSM) with a feed-forward Neural Network for American put option pricing. This approach helps capture the

intricacies of dynamic markets and enhances the model adaptability to unpredictable market behaviors. The proposed model is evaluated using real-life Bitcoin (cryptocurrency) option data emphasizing short-term maturities. The error comparison reveals that the performance of FOBSM with NN is superior to that of existing popular BSM variants, such as, conventional BSM, Binomial tree, and BSM with LSM (Longstaff-Schwartz Least-Squares Monte Carlo).

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Author keywords- American option; Fractional Derivatives; Fractional Order Black-Scholes-Merton; Monte Carlo simulations; Neural network



COMPREHENSIVE INVESTIGATION OF MICROWAVE SINTERED ALCOCRFENI/TI-6AL-4V COMPOSITE: MICROSTRUCTURAL INSIGHTS, MECHANICAL PROPERTIES, AND TRIBOLOGICAL PERFORMANCE

Mandapalli Mahesh, Akhil U.V, Radhika N, **Rajeshkumar L**

Alexandria Engineering Journal ISSN 11100168 DOI 10.1016/j.aej.2024.06.067

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Alexandria Engineering Journal

Open access

11.2

CiteScore

6.2

Impact Factor

Abstract

Ti-6Al-4 V is an extensively used and highly versatile titanium alloy. It is renowned for its lightweight-to-strength ratio, excellent biocompatibility, and corrosion resistance. The pursuit of advanced materials with enhanced mechanical strength, and wear resistance has led to the exploration of high entropy alloys (HEA) as particle reinforcements. This study combines Ti-6Al-4 V with AlCoCrFeNi HEA at different weight compositions (0 %, 2 %, 4 %, 6 %, 8 %) to create novel composites with tailored properties. The composites were subjected to density, microhardness, tensile, and pin-on-disc tests to evaluate mechanical and tribological properties. Microstructural analysis revealed that microwave sintering has enhanced densification and resulted in

uniform dispersion of HEA particles within the Ti-6Al-4 V matrix. The XRD and EBSD analysis revealed the presence of BCC structure in the composite. 8 wt%- AlCoCrFeNi/Ti-6Al-4 V sample exhibited an impressive 81.66 % increase in microhardness and 21.23 % in yield strength, compared to the base sample. Furthermore, noteworthy reductions of 45 % in wear rate and 40 % in coefficient of friction (COF) when subjected to tribological analysis. The worn surface revealed the presence of oxide layer formation at elevated sliding velocity and distance which resulted in reduced wear rate.

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Author keywords- AlCoCrFeNi; High entropy alloys; Microwave sintering; Ti-6Al-4V; Tribology



ENERGY EFFICIENT AODV ROUTING PROTOCOLS FOR FANETS

Mariyappan K, Kumar Satish R, **Sharma Rajesh R**, Sasi Archana

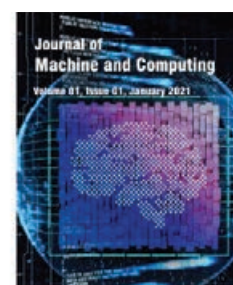
Journal of Machine and Computing ISSN 27891801 DOI 10.53759/7669/jmc202404065

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Journal of Machine and Computing

Journal of Machine and Computing (JMC) addresses the current research activities in machine and computing with examination of rigorous concepts of computation and is facilitated by the distinction between intelligence, mathematical, symbolical, and physical computations. JMC focuses machine and intelligence seems to be the current technical buzzword as everyone seems to be getting into this research. JMC welcomes submissions of innovative research, theoretical and practical significance that will support, and foster technology improvements related to Intelligence, Mechanical, Expert System, Robotics, Mechatronics and computation. Papers on theory, method, and modeling as well as on application topics are all invited.



Abstract

All system units in flying UAV like transmitter, receiver equipment, control unit, information processing unit and payloads are powered by in build power sources. UAVs equipped with the limited on-board energy capability restrict the flying time, which will significantly affect the performance of a FANETs. Optimizing the energy consumption among nodes is one of the important research challenges. Optimization techniques for energy usage can be implemented at different OSI layer level. In our study we focused on OSI networks layers solution for performance improvements based on energy efficient routing techniques in flying ad hoc network environments. The Routing algorithm that is used in MANETs applications can be optimized and used in FANETS as in both networks' majority of the operational characteristics similar. But Few characteristics in FANETS

like distance coverage, node mobility velocity, capacity and types of power supply used differentiate from other mobiles networks (VANETs, MANETs). During the first phase of our work, we evaluated the performance of classical routing protocols AODV, DSR, DSDV in FANETs using energy metrics. Result in first phase reveal that AODV performance is superior to other protocols in FANETs. In second phase we designed EEAODV protocols which use energy metrics in addition to hop count for path optimization. Finally details performance comparison study between EEAODV and AODV performed, the result shows that EEAODV performance is much better than AODV. For our performance evaluation we used NS-3 simulator and random waypoint mobility models.

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Author keywords- Ad Hoc On Demand Distance Vector Protocols; Destination Sequence; Distance Vector Protocols; Dynamic Source Routing Protocols; Mobile Ad-Hoc Network; Unmanned Aerial Vehicles



IOT-CONNECTED TELEHEALTH ENVIRONMENTS WITH LONG SHORT-TERM MEMORY NETWORKS FOR PRECISE TIME-SERIES PATIENT BEHAVIOR ANALYSIS

Maruthukannan B, **Karpagalakshmi R.C**, Lakshmi D, Rajapriya M, Wise, D.C. Joy Winnie, Srinivasan

C- 2024 International Conference on Intelligent Systems for Cybersecurity, ISCS 2024979-835037523-7 DOI 10.1109/ISCS61804.2024.10581323

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Abstract

Advanced analytics are becoming more important in telehealth environments as the number of connected devices continues to rise, necessitating the collection of massive amounts of time-series patient data. This system uses Long Short-Term Memory (LSTM) networks in telemedicine that are linked to the Internet of Things (IoT), with an emphasis on accurate longitudinal monitoring of patient behavior. An extensive dataset gathered from IoT devices that track several health metrics in real-time is used in the research. LSTM networks are used to detect patterns and relationships in time-series data using a deep learning technique. In turn, this allows the system to analyze patient behavior with more precision and speed. IoT provides

seamless connections for real-time data transfer it offers continuous monitoring within the telehealth framework. The LSTM-based model improves our comprehension of patient behavior, which in turn enables us to spot outliers, forecast health trends, and provide individualized healthcare recommendations. Through its demonstration of LSTM networks' usefulness in the context of IoT-connected telehealth settings, the study makes a valuable contribution to the rapidly growing area of digital health. Accurate time-series analysis has the ability to improve patient monitoring, early intervention, and healthcare outcomes, as shown by the results.

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Author keywords- Behavior Prediction; Healthcare Data Analysis; Precision Medicine; Predictive Analytics; Remote Monitoring Systems



BRAIN DISEASE PARKINSON'S DIAGNOSIS USING VGG-16 AND VGG-19 WITH SPIRAL AND WAVES DRAWINGS AS INPUT

Mathkunti N.M.; Ananthanagu U.; Ebin P.M.,

9th IEEE International Conference for Convergence in Technology, I2CT 2024 Pune

5 April 2024 through 7 April 2024

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International Conference for Convergence of Technology (I2CT)

Abstract

- After Alzheimer's disease, Parkinson's disease (PD) is a prominent disease that falls within the category of neurodegenerative disorders and dementia. There is no known etiology for this illness. PD has an impact on motor control. It usually starts slowly and can have minimal symptoms at first. It also usually advances slowly over time. For those with Parkinson's disease (PD), there are medications available to control symptoms and enhance quality of life. To preserve the patient's life, an early diagnosis of the illness is essential. Early diagnosis of such complicated disorders is one of the most elusive goals in healthcare. The current task involves using neuropsychological testing, such as

obtaining patient drawings, to identify the illness. These illustrations could be of waves, spirals, clocks, etc. In this case, the model based on VGG-16 and VGG-19 is regarded to have input in the form of spiral and waves. The model's output, which has an accuracy of above 0.83, illustrates the overfitting that commonly happens, especially in complex models. It's crucial to strike a balance. It is essential to regularly observe and modify the model using performance metrics on untested data in order to ensure the model's good generalization to novel settings.

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Author keywords- Parkinson's Disease; Spiral Drawings; VGG-16; VGG-19; Wave Drawings



DIFFERENT SMART DIAGNOSIS PROCESSES OF ALZHEIMER'S BRAIN DISEASE USING AI TECHNIQUES

Mathkunti N.M.; Rangaswamy S.

Smart Medical Imaging for Diagnosis and Treatment Planning Pages 46 - 7031
July 2024

Ms. Nivedita Manohar

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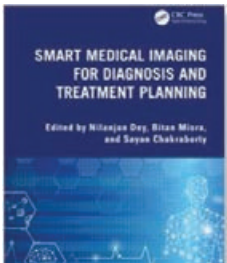


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Book Description

1st Edition

Smart Medical Imaging for Diagnosis and Treatment Planning

Edited By Nilanjan Dey, Bitan Misra, Sayan Chakraborty
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Abstract

As the world's population ages and the load on healthcare systems increases, it is critical to diagnose Alzheimer's Disease (AD) which is the one of threatening disease of the era. most accuracy.. Different features of the brain structure are evaluated by different diagnostic techniques, such as brain MRI and blood markers, to identify abnormalities associated with AD. Acetylcholine, which is essential to hippocampal formation and is depleted in AD, is a neurotransmitter that plays a major role in memory and cognition. Metabolites are identified using multi-omics analysis

as promising prognostic markers for the progression of AD, with the potential use in early detection and biomarker development. AI software is a crucial component of clinical practice since it helps with early AD detection, therapy, and comprehension of metabolic abnormalities. To overcome the difficulties presented by AD in aging populations, the convergence of multi-omics analysis, biomarkers, and AI heralds a viable strategy for early AD identification and therapy.
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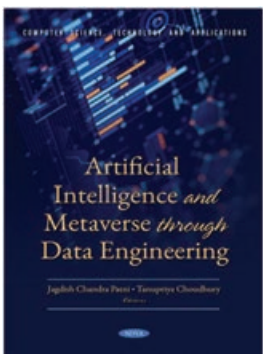
AUGMENTED REALITY WITH THE MIX OF ARTIFICIAL INTELLIGENCE AND DATA ENGINEERING

Maurya S.K.; Pal O.P.; Savarkar K.; **Patni J.C.**,

Artificial Intelligence and Metaverse through Data Engineering Pages 173 - 1988
July 2024

Dr. Jagdish Chandra Patni

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Abstract

Augmented Reality (AR) integrated with Artificial Intelligence (AI) and Data Engineering forms a dynamic and transformative blend of technologies, revolutionizing the way we perceive and interact with our environment. Augmented Reality, an immersive technology overlaying digital content on the real world, is amplified with AI algorithms, enabling real-time object recognition, natural language processing, and personalized recommendations. Data Engineering facilitates the seamless collection, processing, and

integration of vast amounts of data essential for AI-driven AR applications. This integration has far-reaching implications across diverse domains, including healthcare, education, gaming, and retail. This encapsulates the profound potential and implications of integrating AR, AI, and Data Engineering, showcasing the innovative possibilities and opportunities that lie at the intersection of these cutting-edge technologies.
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Author keywords- Artificial intelligence (AI); Augmented reality (AR); Data engineering; Data integration; Data preprocessing; Deep learning; Immersive technology; Interactive learning; Machine learning; Natural language processing (NLP); Object recognition; Real-time interaction



CHALLENGES AND OPPORTUNITIES: ASSESSING THE IMPACT OF GST ON MSMEs AND THE NEED FOR ONGOING SUPPORT

Monachan S.; **Hameed A.**; Babu T.; Nair R.R.; Sharma R R.; Chinnaiyan R.;

4th International Conference on Innovative Practices in Technology and Management, ICIPTM 2024 Noida 21 February 2024 through 23 February 2024

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Innovative Practices in Technology and Management (ICIPTM), International Conference on

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Abstract

The implementation of the Goods and Services Tax (GST) has presented both opportunities and challenges for Micro, Small, and Medium Enterprises (MSMEs). While a portion of individuals (31.4%) who received training from government and third-party sources managed to comprehend and adhere to GST requirements, they encountered significant difficulties, particularly in the registration process (43.1%), return filing fees (46.1%), and payment procedures (32.4%). Despite efforts, a majority of MSME owners (56.9%) reported adverse effects on their sales and revenue, underscoring the challenges businesses face in adjusting to the new tax system. Furthermore, a considerable percentage (36.3%) experienced a decline in profits, indicating the financial impact of GST adoption on MSMEs. Notably, a mere 2.9% reported

increased profits, highlighting that only a few businesses capitalized on the potential benefits of GST. These findings underscore the persistent need for ongoing support, guidance, and simplification of compliance requirements for MSME owners. The difficulties faced by MSMEs, coupled with the negative impacts on sales, income, and profitability, emphasize the importance of continuous efforts to streamline processes, provide comprehensive training, and help. Policymakers and stakeholders play a crucial role in mitigating the adverse effects on businesses, fostering a more conducive environment for the growth and sustainability of MSMEs through targeted interventions and support mechanisms in adapting to the GST system.

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Author keywords- and support; Compliance difficulties; GST implementation; MSME challenges; Profitability decline; Revenue impact; Training



CHALLENGES AND OPPORTUNITIES: ASSESSING THE IMPACT OF GST ON MSMEs AND THE NEED FOR ONGOING SUPPORT

Nachiappan B.; Najmusher H.; Nagarajan G.; **Rajkumar N.**; Loganathan D.; Gobinath,

Salud, Ciencia y Tecnologia - Serie de Conferencias Open Access Volume 36 March 2024

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Published: 2024-03-06

Abstract

Drone Technology is being used by an increasing number via the development area to improve some of the elements of its operations. Drones have unique competencies that can grow construction projects effectiveness, protection, and affordability. This study examines how drones are presently being used inside the construction zone and the way they could affect construction site online surveying, project control, development monitoring, and safety inspections. The study additionally addresses the difficulties and capacity benefits of incorporating the drone era into production methods. The drone era has a variety of

capabilities to change traditional techniques inside the production industry and decorate challenge outcomes. Droneera software creation has become a recreation-changing trend with many benefits, from more suitable productivity to safer and greater sustainable operations. Drones are being used for some purposes, which include environmental tracking, site online surveying, inspections, and development tracking. This study examines the several uses of drones within the construction sector and talks about how this technology may affect the sector going forward.

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Author keywords- Construction; Drone; Monitoring; Safety; Surveying and Mapping



MACHINE LEARNING-BASED SYSTEM FOR AUTOMATED PRESENTATION GENERATION FROM CSV DATA; [SISTEMA BASADO EN APRENDIZAJE AUTOMÁTICO PARA LA GENERACIÓN AUTOMATIZADA DE PRESENTACIONES A PARTIR DE DATOS CSV]

Nachiappan B.; **Rajkumar N.**; Kalpana C.; Mohanraj A.; Prabhu Shankar B.; Viji C,
Data and Metadata Volume 38 February 2024.

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Published: 2024-03-06

Abstract

Effective presentation slides are crucial for conveying information efficiently, yet existing tools lack content analysis capabilities. This paper introduces a content-based PowerPoint presentation generator, aiming to address this gap. By leveraging automated techniques, slides are generated from text documents, ensuring original concepts are effectively communicated. Unstructured data poses challenges for organizations, impacting productivity and profitability. While traditional methods fall short, AI-based approaches offer promise. This systematic literature review (SLR) explores AI methods for extracting data from unstructured details. Findings reveal limitations in existing methods,

particularly in handling complex document layouts. Moreover, publicly available datasets are task-specific and of low quality, highlighting the need for comprehensive datasets reflecting real-world scenarios. The SLR underscores the potential of Artificial-based approaches for information extraction but emphasizes the challenges in processing diverse document layouts. The proposed is a framework for constructing high-quality datasets and advocating for closer collaboration between businesses and researchers to address unstructured data challenges effectively.
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Author keywords - Automated Presentation Generation; Content-Based Powerpoint; CSV File Processing; Data Preprocessing; Data Visualization; Feature Extraction; Information Extraction; Machine Learning Algorithms; Python Pptx Module; Slide Creation; Text Document Analysis; Unstructured Data Analysis



MACHINE LEARNING-BASED SYSTEM FOR AUTOMATED PRESENTATION GENERATION FROM CSV DATA; [SISTEMA BASADO EN APRENDIZAJE AUTOMÁTICO PARA LA GENERACIÓN AUTOMATIZADA DE PRESENTACIONES A PARTIR DE DATOS CSV]

Nair R.R.; Babu T.; Kishore S.; Vilashini V.,

Procedia Computer Science Open Access Volume 235, Pages 3458 – 3467 2024.

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Procedia Computer Science
Open access

Abstract

Healthcare systems around the world have faced challenges due to the Coronavirus disease (COVID-19) epidemic, which has taken resources and attention away from long-term diseases like liver cancer. To identify the effect of COVID-19 on liver cancer, proposed an effective research work with Extreme Gradient Boosting (XGBoost) classifier. The identification of the most suitable feature is executed through the utilization of SelectKBest, Principal Component Analysis (PCA) and Singular Value Decomposition (SVD) techniques. A comparative analysis is carried out to ascertain the more precise feature selection, employing Decision Tree, K-Nearest Neighbors (KNN), CatBoost, LightGBM, and XGBoost algorithms. Further, the proposed work undertakes an analysis of the impact of COVID-19 on

liver cancer, encompassing both the pandemic and pre-pandemic periods. In comparison to other feature selection techniques and models, SelectKBest feature selection with Xgboost classifier provided an accuracy of 0.92. The proposed research work provides valuable insights to healthcare professionals and policy makers, providing a better understanding of the challenges faced by liver cancer patients during the pandemic. By meticulously exploring feature selection techniques and employing advanced machine learning models, this study quantifiably demonstrates the effectiveness of the proposed methodology in addressing the impact of COVID-19 on liver cancer, contributing to a more comprehensive understanding of this critical issue.
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Author keywords- hepatocellular carcinoma; Principal Component Analysis; SelectKBest; Singular Value Decomposition; XGBoost Classifier



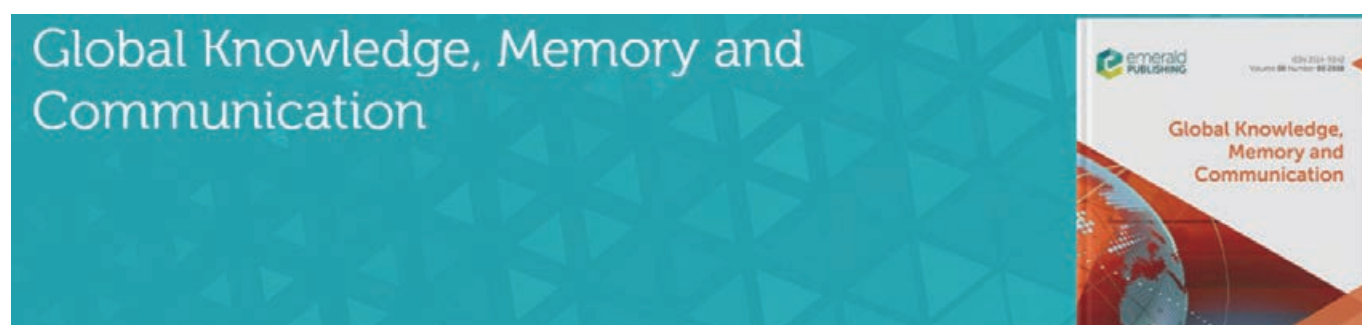
IMPACT OF VALUES ON THE CONTINUAL INTENTION OF MOBILE HEALTH APPS: A TEXT MINING PERSPECTIVE

Niduthavolu S.; **Airani R.**

Global Knowledge, Memory and Communication2024.

Dr. Rajeev Airani

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Abstract

Purpose: This study aims to examine values derived from apps and their relationship with continual intention using reviews from the Google Play Store. **Design/methodology/approach:** This paper delves deep into the determinants of mobile health apps' (MHAs) value offering (functional, social, epistemic, conditional and hedonic value) using automatic content analysis and text mining of user reviews. This paper obtained data from a sample of 45,019 MHA users who have posted reviews on the Google Play Store. This paper analyzed the data using text mining, ACA and regression techniques. **Findings:** The findings show that values

moderate the relationship between review length and ratings. This paper found that the higher the length, the lower the ratings and vice versa. This paper also demonstrated that the novelty and perceived reliability of the app are the two most essential constructs that drive user ratings of MHAs. **Originality/value:** This is one of the first studies, to the best of the authors' knowledge, that derives values (functional, social, epistemic, conditional and hedonic value) using text mining and explores the relationship with user ratings.

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Author keywords- -- Automatic content analysis; Continual intention; mHealth apps; Ratings; Values



ENHANCING NATURAL LANGUAGE PROCESSING IN MULTILINGUAL CHATBOTS FOR CROSS-CULTURAL COMMUNICATION

Nivedhitha D.M.; Subramanian J.; Selvaraj V.K.; Viswapriyan A.S.; Nishaanth S.G.;
Suyambulingam I.; Siengchin S.,

5th International Conference on Intelligent Communication Technologies and Virtual
Mobile Networks, ICICV 2024 Tirunelveli 11 March 2024 through 12 March 2024

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Innovative Practices in Technology and Management (ICIPTM), International Conference on

Abstract

In order to promote smooth cross-cultural communication, this research focuses on improving Natural Language Processing (NLP) features within multilingual Chabots. The need for efficient communication across various linguistic and cultural barriers has grown as the world becomes more interconnected. In this context, multilingual Chabot's are essential tools that facilitate easy communication between users of various cultural backgrounds. In order to better understand and respond to a wide range of linguistic details, idioms, and cultural allusions, the research explores ways to improve NLP algorithms. This research investigates how machine learning techniques can be integrated to improve the Chabot's ability to adapt to various linguistic patterns, enabling it to acquire new language skills over time. By implementing an extensive and flexible approach, the proposed approach seeks to transform Natural Language Processing in Multilingual Chatbots for Cross-Cultural Communication. In order to identify

language-specific patterns and specifications, the methodology starts with the collection of a diverse dataset that is representative of linguistic variations and cultural contexts. It then uses advanced linguistic analysis techniques like phonetic analysis. The next step is cultural context modelling, which entails building a database enhanced with cultural allusions and language variations unique to a given context that are obtained from various sources. Transfer learning, reinforcement learning for dialogue, and modern algorithms such as Multilingual Unsupervised and Supervised Embeddings (MUSE) for cross-lingual embeddings are all included in machine learning integration. In order to obtain information about language precision and cultural sensitivity, the methodology incorporates interactive surveys and sentiment analysis into a strong user feedback mechanism. The proposed model achieved 98% performance.

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Author keywords- Chatbots; Intercultural Communication; Machine Learning; Multilingual Chatbots; Natural Language Processing



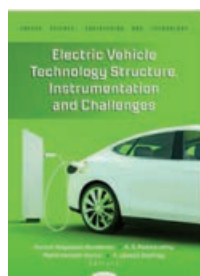
DRIVING THE FUTURE: CIVIL ENGINEERING'S INTEGRATED ROLE IN ELECTRIC VEHICLE TECHNOLOGY AND INFRASTRUCTURE

Padmavathy N.S.; **Kumar M.H.**; Kumar R.; Ruban R., Electric Vehicle Technology Structure,

Instrumentation and Challenges Pages 95 - 144 12 June 2024

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Abstract

The fast expansion of electric vehicles (EVs) is resulting in a noteworthy shift in our transportation environment. This abstract explores how important civil engineering is to the development of EV technology and the infrastructure that supports it. A reliable and effective network of charging stations is essential to the success of EV adoption, and charging station design, construction, and optimization are the domain expertise of civil engineers. They also play a vital role in developing sustainable materials for the construction of infrastructure and EV manufacturing. The impact of rising EV usage on our road infrastructure,

including traffic management and road capacity, is the responsibility of civil engineers. In addition, this abstract highlight the necessity of multidisciplinary cooperation between environmental campaigners, engineers, and legislators to incorporate EVs into our current transportation networks smoothly. Civil engineers are leading the way in the development of electric vehicle technology and are essential to the sustainable transportation of the future.

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Author keywords- Civil engineering; Electric vehicles; Sustainable materials; Transportation systems



RESEARCH JULY 2024

PUBLICATIONS

ALLIANCE UNIVERSITY

Chikkahadage Cross Chandapura-Anekal, Main Road,
Bengaluru, Karnataka 562106
