

Document details - Cloud computing and machine learning in the green power sector: Harnessing sustainable innovations

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Advanced Applications in Omnicomputing
4 March 2024, Pages 153-179

**Cloud computing and machine learning in the green power sector: Harnessing sustainable innovations**  
 (Book Chapter)

Agarwal, A.V., Sujatha, G., Sairale, P., Rajith, P., Cloudin, S., Soma, B. &

<sup>1</sup>Department of Electronics and Communication Engineering, J. P. Institute of Engineering and Technology, India  
<sup>2</sup>Department of Electronics and Communication Engineering, Sri Venkateswara College of engineering (Autonomous), India  
<sup>3</sup>Department of Electronics and Communication Engineering, S.A. Engineering College, India

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**Abstract**

The chapter explores the potential of cloud computing, machine learning, and the green power sector in promoting sustainable energy production and consumption. Cloud computing offers efficient data storage and processing, while machine learning algorithms optimize energy production, distribution, and consumption. It highlights how cloud-based infrastructure can enhance renewable energy forecasting, energy grid management, and demand response systems. Edge computing brings intelligence renewable energy sources, reducing latency and energy consumption. The chapter also addresses challenges like data privacy, security, and scalability, emphasizing the need for robust frameworks.

**Chapters in this book**

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- Facial emotion recognition using osmotic computing
- Role of somatic computing in civil engineering
- Practices
- A secure image protection for IoT applications using watermarking technique and non-linear heuristics prediction accuracy through fog computing: Integration of advanced algorithms and edge analytics
- From theory to practice: A comprehensive review of osmotic computing
- Speech emotion recognition with osmotic computing
- Osmotic-based supervision of EV
- Healthcare monitoring and analysis using thingspeak IoT platform: Capturing and analyzing sensor data for enhanced patient care
- Cloud computing and machine

Document details - An agile autonomous car driving assistance using hybrid optimization-based kernel support vector convolutional network

1 of 1  
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Expert Systems with Applications
Volume 237, 1 March 2024, Article number 121337

**An agile autonomous car driving assistance using hybrid optimization-based kernel support vector convolutional network(Article)**

Jeyalakshmi, S., Ravikumar, S., Lakshmi, R., Vivekanandan, G. &

<sup>1</sup>Department of Artificial Intelligence and Data Science, SRM Valluvar Engineering College, Chennai, India  
<sup>2</sup>Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Andhra Pradesh, 522502, India  
<sup>3</sup>Department of Computer Science and Engineering, Sri Sairam Institute of Technology, Chennai, India

**Abstract**

In robotic control systems, autonomous car driving is considered a complicated task. The conventional modular techniques necessitate precise localization, planning, and mapping procedures to provide safe driving. These requirements make autonomous car driving tasks computationally ineffective and sensitive to ecological changes. In recent times, the emergence of deep learning-based approaches in autonomous car driving systems provided promising solutions for complex vision task interpretation, localization, and environmental perception. But, they create distribution mismatch issues and require huge perious interaction information to offer safe driving with the

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Lu, Q., Li, C., Yin, L  
 Multi-path parallel enhancement of low-light images based on multiscale spatially aware Retinex decomposition  
 [2024] Expert Systems with Applications

Gan, L., Chu, W., Li, G.  
 Large models for intelligent transportation systems and autonomous vehicles: A survey  
 [2024] Advanced Engineering Informatics

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## Document details - Microwave-assisted extraction of betanin from beta vulgaris and their characterization and applications to nonlinear optics

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Indian Journal of Physics  
 Volume 98, Issue 5, May 2024, Pages 1843-1848

**Microwave-assisted extraction of betanin from beta vulgaris and their characterization and applications to nonlinear optics(Article)**

Sujitha, S.O.A., Jeyarom, S. [✉](#)

<sup>1</sup>Department of Chemistry, Sri Sakam Institute of Technology, West Tambaram, Tamil Nadu, Chennai, 600944, India  
<sup>2</sup>Department of Physics, Yashwantrao University, Ongur (PO), Tiruvannam (TK), Tamil Nadu, Villupuram, 694305, India

**Abstract**

Herein, we report the third-order nonlinear optical (NLO) features of the natural pigment betanin extracted from beta vulgaris (beet root) using microwave-assisted extraction (MAE) technique. The natural pigment betanin is examined via UV-visible absorption, photoluminescence, FT-IR and <sup>1</sup>H NMR spectroscopic techniques, respectively. Third-order NLO features of the extracted natural pigment are scrutinized by low-power CW diode laser at 532 nm wavelength. Betanin shows negative nonlinear index of refraction (n<sub>2</sub>) and positive nonlinear coefficient of absorption (β) owing to self-defocusing and reverse saturable absorption (RSA) behavior. The order of magnitude of n<sub>2</sub> and β of betanin is measured to be 10<sup>-14</sup> (m<sup>2</sup>/W) and 10<sup>-11</sup> (m/W), respectively. The results firmly suggest that the natural pigment betanin extracted from red beet root is a novel optical candidate for future photonics and optoelectronics optical applications. © Indian Association for the Cultivation of Science 2023.

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Tuma, F.A., Ashoor, M.J., Sultan, H.A.  
 Curcumin Analogue Spectral, Nonlinear Optical Properties and All-optical Switching Using Visible, Low-Power CW Laser Beams  
 (2024) *Journal of Fluorescence*

Chen, L., Yin, Y., Zhou, X.  
 An antioxidant hydrogel dressing with wound pH indication function prepared based on etched bacterial nanocellulose crosslinked with beet red pigment extract  
 (2024) *International Journal of Biological Macromolecules*

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## Document details - Thickness based Degradation Study of Commercial Polyethylene Waste Carry Bags using Galleria mellonella Worms

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Research Journal of Chemistry and Environment  
 Volume 28, Issue 5, May 2024, Pages 190-195

**Thickness based Degradation Study of Commercial Polyethylene Waste Carry Bags using Galleria mellonella Worms(Article)**

Jayaprakash, R., Ayyadurai, G.K., Shajahan, A., Rathika, S. [✉](#)

<sup>1</sup>Department of Chemistry, School of Arts and Science, Vinayaka Mission's Research Foundation, Deemed University, Vinayaka Mission's Chennai Campus, TN, Chennai, 603104, India  
<sup>2</sup>Department of Chemistry, Sri Sakam Engineering College, Sri Lao Nagar, West Tambaram, TN, Chennai, 600944, India  
<sup>3</sup>Department of Chemistry, School of Physical and Chemical Sciences, B.S. Abdur Rahman Crescent Institute of Science and Technology (DUE), TN, Chennai, 600048, India

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**Abstract**

Modern world is facing lot of polymers which degrade land and will reduce agricultural yield. In many ways. Thus, the cost-effective degradation or recycling is being studied by the researchers. This study reformed settings to study the Galleria mellonella wax worm's impact on polyethylene polymer degradation. This work isolated the worms from waste honey comb and treated five worms with the collected polymer. Trials were conducted at different seasons and monitored the degradation. Trials results showed minimum average degradation of 86 and over 216 h with

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## Document details - Skin cancer diagnosis: Leveraging deep hidden features and ensemble classifiers for early detection and classification

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Biomedical Signal Processing and Control  
 Volume 88, February 2024, Article number 105306

**Skin cancer diagnosis: Leveraging deep hidden features and ensemble classifiers for early detection and classification(Article)**

Akilandeeswary, G., Nirmaladevi, G., Seganthi, S.D., Aishwariya, A.

Sri Sai Ram Institute of Technology, Chennai, 600044, India

**Abstract**

Problem: Cancer is a deadly disease that requires better diagnostics. Early detection improves skin cancer survival. Due to skin lesion dissimilarity, automated image categorization for skin cancer is problematic, making early diagnosis costly and complicated. Objective: This study proposes a deep hidden feature and ensemble classifier skin cancer detection and classification technique. It handles real-time data streaming prediction and dimensionality issues. Methods: The research work employs the sand cat swarm optimization with ResNet50 (SCSO-ResNet50) method to separate deep hidden features from known features, ensuring accurate predictions. They utilize an improved harmony search (IH) approach to optimize features and reduce data dimensionality. Ensemble classifiers, including Naive Bayes, random forest, k-nearest neighbor (k-NN), support vector machine (SVM), and linear regression, are used for early cancer diagnosis. The performance of the proposed methodology is evaluated using the Kaggle skin cancer dataset and the ISIC 2013 dataset, comparing it to state-of-the-art classifiers in

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Daswanti, B., Patal, I.  
 An innovative deep learning framework for skin cancer detection employing ConvNextV2 and focal self-attention mechanisms  
 (2025) Results in Engineering

Sato, R.F., Godoy, S.E.  
 An automatic approach to detect skin cancer utilizing active infrared thermography  
 (2023) Heliyon

Yadav, D.P., Sharma, B., Chauhan, S.  
 Dual scale light weight cross attention transformer for skin lesion classification  
 (2024) PLoS ONE

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## Document details - Applications of machine learning algorithms in data encryption standards

**LeF1**  
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Machine Learning and Cryptographic Solutions for Data Protection and Network Security  
 11 May 2024, Pages 111-114

**Applications of machine learning algorithms in data encryption standards (Book Chapter)**

Subashini, V., Jemezi, R.

Sri Sairam Institute of Technology, India

**Abstract**

Encryption plays a crucial role in safeguarding sensitive information in today's digital world. The traditional encryption methods rely on mathematical algorithms, such as RSA and AES, for securing data. The proliferation of digital communication and the increasing need for secure data transmission have prompted significant advancements in encryption techniques. As data breaches and cyber threats become more sophisticated, there is an increasing need for robust encryption techniques. Machine learning algorithms, with their ability to adapt and learn from data patterns, have emerged as a valuable tool in enhancing encryption processes. This chapter explores the applications of machine learning algorithms in encryption, highlighting their potential to improve security, speed, and versatility. The authors delve into various aspects, including data encryption, key management, authentication, and intrusion detection, demonstrating how machine learning can contribute to the development of more robust and efficient encryption systems. © 2024, IGI Global. All rights reserved.

**Chapters in this book**

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 Innovative machine learning applications for cryptography:  
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 Preface  
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 Utilizations of AI in cryptography: A study  
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## Document details - Rainfall Based Flood Prediction in Kerala Using Machine Learning

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International Journal of Intelligent Systems and Applications in Engineering  
Volume 12, Issue 16, 15 February 2024, Pages 141-144

**Rainfall Based Flood Prediction in Kerala Using Machine Learning(Article)**

Vidya, S., Gayathri, S., Disha, M., Krithika, S.

Sri Sai Ram Institute of Technology, Chennai, India

**Abstract**

Among the most damaging natural disasters are floods, which are very difficult to model. Flood prediction is a critical task that involves forecasting the likelihood of floods in a given area, allowing people to take necessary precautions to minimize damages and prevent loss of life. Machine learning (ML) algorithms have shown great potential in flood prediction, as they can analyze large amounts of data from multiple sources to provide accurate and timely predictions. The objective is to find a prediction model that is more accurate and efficient by incorporating new machine learning techniques and hybridizing current ones. Both hydrologists and climate scientists can use this model as a guideline for selecting the appropriate machine learning technique for a given prediction problem. The output of the ML-based flood prediction system can also be integrated with existing flood warning systems, enabling authorities to send out alerts in a timely manner and take necessary precautions to minimize the effects of flooding. © 2024, Tamil Saritas. All rights reserved.

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Wang, S., Xu, Q.  
Mountain Flood Level Forecasting in Small Watersheds Based on Recurrent Neural Networks and Multi-Dimensional Data  
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## Document details - SMART DRIVING LICENSING SYSTEM AND AUTHORIZATION OF AUTONOMOUS VEHICLE INTEGRATING WIRELESS SENSOR NETWORKS AND IoT

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Telecommunications and Radio Engineering (English translation of Elektrosvyaz and Radiotekhnika)  
Volume 81, Issue 9, 2024, Pages 69-85

**SMART DRIVING LICENSING SYSTEM AND AUTHORIZATION OF AUTONOMOUS VEHICLE INTEGRATING WIRELESS SENSOR NETWORKS AND IoT(Article)**

Santhakumar, D., Suchan, M.B., Prasanna, H., Manikandan, S.P., Prathaban, B.P., Kanna, B.B., Saravanan, G.

<sup>1</sup>Department of Computer Science and Engineering, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai, India  
<sup>2</sup>Department of Computer Science and Engineering, SRM Institute of Science and Technology, Chennai, Tamil Nadu, India  
<sup>3</sup>Department of Electronics and Communication Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, India

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**Abstract**

The advent of autonomous vehicles has revolutionized the automotive industry, offering promising advancements in safety, efficiency, and mobility. To integrate these autonomous vehicles into our society seamlessly, it is imperative to establish a robust licensing system that ensures

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Document details - A novel energy optimization framework to enhance the performance of sensor nodes in Industry 4.0

Energy Science and Engineering  
Volume 12, Issue 3, March 2024, Pages 835-839

**A novel energy optimization framework to enhance the performance of sensor nodes in Industry 4.0 (Article) (Open Access)**

Sivakumar, S., Logeshwaran, J., Kannadasan, R., Fohiem, M., Ravikumari, D.

<sup>1</sup>Department of Computer Science and Engineering, Karunya Institute of Technology and Sciences, Coimbatore, India  
<sup>2</sup>Department of Electronics and Communication Engineering, Sri Eshwar College of Engineering, Coimbatore, India  
<sup>3</sup>Department of Electrical and Electronics Engineering, Sri Venkateswara College of Engineering, Sriperumbudur, India

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**Abstract**

Industry 4.0 is a term used to refer to the fourth industrial revolution, characterized by the introduction of new technologies, such as the Internet of Things, Big Data, and artificial intelligence (AI). As the number of connected devices in industrial settings grows, energy optimization of such sensors becomes increasingly essential. This paper proposes an energy optimization framework for sensor nodes in Industry 4.0. The framework is based on energy efficiency, energy conservation, and energy harvesting principles. It is designed to optimize the energy consumption of sensor nodes while maintaining their performance. The framework includes dynamic power management, scheduling, and harvesting techniques to

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Fohiem, M., Al-Chorazwani, M.A.  
 Multiplexer cyberattacks identification and classification using machine learning in internet of blockchain (IoBC)-based energy networks

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Suresh, V.G., Kumar, S., Dede, D.K.  
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Dhahbi, D., Wigenech, M., Kalra, H.  
 Pattern-Aware Motion Tracking and Estimation From Low-Resolution Using Deep Learning

Document details - A Novel Performance Enhancement of Real-Time IoT Applications Using Big Data Analytics

AIP Conference Proceedings  
 Volume 2742, Issue 1, 11 February 2024, Article number 020031

1st International Conference on Engineering, Medicine, Management, Arts and Sciences 2021, EMMA 2021, Virtual, Online, India, 29 December 2021 through 31 December 2021, Code 197321

**A Novel Performance Enhancement of Real-Time IoT Applications Using Big Data Analytics (Conference Paper) (Open Access)**

Saithihal, C.R., Sundararajan, Periyasamy, Shanthik, A., Fantha, J.R.

<sup>1</sup>Department of Computer Science(S), Sri Ramakrishna Mission Vidyalyaya College of Arts and Science, Tamil Nadu, Coimbatore, India  
<sup>2</sup>Department of MCA, SNS College of Technology, Tamil Nadu, Coimbatore, India  
<sup>3</sup>Department of Computer Science and Applications, SRM Trichy Arts and Science College, Tamil Nadu, Trichy, India

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**Abstract**

In 2017, it was projected that there will be 285 million visually impaired people of all ages, with 31.9 million of them being blind, bringing the total number of visually impaired people to 285 million. There are a number of cutting-edge technological solutions available to make the transportation of these individuals more efficient. The next major challenge for technical professionals will be to provide solutions that are both efficient and cost-effective. The ability to navigate safely, recognize impediments, and move freely between places in new settings is one of the

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## Document details - Investigation of delamination and surface roughness in end milling of glass fibre reinforced polymer composites using Fuzzy Model and Grey wolf Optimizer

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International Journal on Interactive Design and Manufacturing

Volume 18, Issue 2, March 2024, Pages 749-768

Investigation of delamination and surface roughness in end milling of glass fibre reinforced polymer composites using Fuzzy Model and Grey wolf Optimizer(Article)

Priya, L.L.M., Palani Kumar, K., Senthil Kumar, N., Prabha, H.S.

<sup>1</sup>Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, India  
<sup>2</sup>Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
<sup>3</sup>Department of Mechanical Engineering, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai, India

View additional affiliations

**Abstract**

This work deals with the end milling operation on glass fibre (a 45° orientation) reinforced polymer (GFRP) composites using three different and mill cutters with four flutes of 6 mm diameter. Three factors such as end milling cutters, cutting speed (CS) and feed rate (FR) are considered whereas delamination (DL) and surface roughness (SR) are the major ones for this machine. The Rational design (RDF) of accurate surface

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Dhinakaran, C.K., Senthil Kumar, N., Palani Kumar, K.  
 Machinability evaluation of magnesium composite using response surface methodology and nature-inspired metaheuristic algorithms  
 (2024) International Journal on Interactive Design and Manufacturing  
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## Document details - An advancing method for web service reliability and scalability using ResNet convolution neural network optimized with Zebra Optimization Algorithm

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Transactions on Emerging Telecommunications Technologies

Volume 35, Issue 5, May 2024, Article number #4968

An advancing method for web service reliability and scalability using ResNet convolution neural network optimized with Zebra Optimization Algorithm(Article)

Gokulakrishnan, D., Ramakrishnan, R., Saritha, G., Sreedevi, B.

<sup>1</sup>Department of Computing Technologies, SRM Institute of Science and Technology, Tamil Nadu, Chengalpattu, India  
<sup>2</sup>Department of Computer Science and Engineering, SASITRA Deemed to be University, Tamil Nadu, Thanjavur, India  
<sup>3</sup>Department of Electronics and Communication Engineering, Sri Sooram Institute of Technology, Tamil Nadu, Chennai, India

View additional affiliations

**Abstract**

Web service reliability and scalability is an important mission that keeps web services running normally. Within web service, the web services invoked by users not only depend on the service itself, but also on web load condition. Due to the features of web dynamics, traditional reliability and scalability methods have become inappropriate at the same time. The web condition parameter search problem will cause inaccurate

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L.L.H.  
 Research on Informationization Construction and Teaching Reform Path of Physical Education Teaching in Colleges and Universities  
 (2024) Applied Mathematics and Nonlinear Sciences  
 Khedimja, R.K., Dav, D., Panda, S.  
 Design and Analysis of 550kV Based Damping Controller: A Novel Modified Zebra Optimization Algorithm Approach  
 (2024) Journal of Electrical and Computer Engineering  
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## Document details - Experimental investigation on machining characteristics of minimum quantity lubrication grinding of AISI-4320 steel using finger millet husk biosilica nanofluid

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Biomass Conversion and Biorefinery  
Volume 14, Issue 6, March 2024, Pages 8103-8113

### Experimental investigation on machining characteristics of minimum quantity lubrication grinding of AISI-4320 steel using finger millet husk biosilica nanofluid(Article)

Karthikeyan, B., Babu, K.

<sup>1</sup>Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
<sup>2</sup>Department of Mechanical Engineering, SSN College of Engineering, Chennai, India

**Abstract**

In this present study, the nanofluid of biosilica was prepared and subjected to study the machining capabilities of cylindrical grinding of AISI-4320 steel material using minimum quantity lubrication (MQL) process. The principal aim of this present investigation was to develop an environmentally clean machining pattern in order to reduce the harmful wastes to the environment. The MQL nanofluids were prepared using ethylene glycol as base and biosilica as super coolers. The biosilica particle was prepared from finger millet husk ash via thermo-chemical process followed by silica-treatment (APTMS) to prevent particle clustering. According to the result, the material removal rate (MRR) of biosilica

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Ji, C., Sheng, R., Wu, H.  
Bibliometric analysis and research trends in minimum quantity lubrication for reducing cutting forces  
(2024) *International Journal of Advanced Manufacturing Technology*

Nithyanandan, N., Gokilakrishnan, G., Manoj Kumar, S.  
Characterization of heat-treated biosilica from biomass waste finger millet husks and banana fiber reinforced epoxy composite  
(2024) *Biomass Conversion and Biorefinery*

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## Document details - Green Chemistry Approach for One-Step Synthesis of Iodinated Graphene Material for Supercapacitor Applications

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Chemistry Select  
Volume 9, Issue 18, 13 May 2024, Article number e2024106820

### Green Chemistry Approach for One-Step Synthesis of Iodinated Graphene Material for Supercapacitor Applications(Article)

Kalicheeran, A., Pithchaimoni, J., Borath Kannan, C., Rajesh, V., Tomlam, M.R., Koutanarapu, R., Baby Shakila, P., Ramash, R.

<sup>1</sup>Department of Chemistry, Panimalar Engineering College, Tamil Nadu, Chennai, 600923, India  
<sup>2</sup>Department of Chemistry, Sri Sai Ram Institute of Technology, Tamil Nadu, West Tambaram, Chennai, 600048, India  
<sup>3</sup>Department of Electrical and Electronics Engineering, Sri Seivam Engineering College, Tamil Nadu, West Tambaram, Chennai, 602109, India

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**Abstract**

Iodinated graphene is a promising 2D material with unique physical and chemical characteristics. A new synthesis method that combines iodine intercalation and surface reduction of graphite sheets in a single step was developed. This method uses  $\text{NaIO}_4$  and m-CPBA to efficiently incorporate iodine and selectively remove oxygen from the graphene network at room temperature. The presence of iodine moieties in the graphene network was confirmed using various techniques such as XPS photoelectron spectroscopy, HR-TEM, XRD, FT-IR, TGA, and Raman spectroscopy. The high iodine content of the material enhanced the electrostatic adsorption capability of the electrode, thereby improving the storage

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## Document details - Survey on Embedding Economical Autonomous Navigation System for Mobile Robots and UAV

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Volume 498, 21 February 2024, Article number 02036  
2024 International Conference on Environmental Development Using Computer Science, ICECS 2024; Hybrid, Tamil Nadu, India; 11 January 2024 through 12 January 2024; Code 197852

Survey on Embedding Economical Autonomous Navigation System for Mobile Robots and UAV(Conference Paper)(Open Access)

Suganthi, S.U., Hamanath Kumar, C.S., Aditya Gurjola, S., Mithunesh Rajan, A.

Sri Sai Ram Institute of Technology, Chennai, India

**Abstract**

Navigation has traditionally served the purpose of determining one's position, locating destinations, and charting a course towards them. It furnishes accurate details about the whereabouts of specific places or objects. Despite numerous advancements and enhancements in navigation technology, there have been ongoing discussions about its potential for autonomy. This suggests a scenario where navigation operates independently, without human intervention. Devices equipped with this capability comprehend their destination and chart the most efficient route to reach it. A crucial concept in this context is Visual Odometry (VO), which calculates the relative position between successive image frames. Likewise, the positioning of mobile robots relies on similar principles. However, a significant challenge arises over time as VO is susceptible to accumulating errors, known as drift. The Inertial Measurement Unit (IMU), which consists of accelerometers, gyroscopes, and

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## Document details - Medical Image Segmentation Using Grey Wolf-Based U-Net with Bi-Directional Convolutional LSTM

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International Journal of Pattern Recognition and Artificial Intelligence  
Volume 38, Issue 2, 1 February 2024, Article number 2354025

Medical Image Segmentation Using Grey Wolf-Based U-Net with Bi-Directional Convolutional LSTM(Article)

Tamilian, G., Varma, C.H.P., Devi, V.B., Babu, G.R.

<sup>1</sup>Department of Computational Intelligence, SRM Institute of Science and Technology, Kattankulathur, Chennai, 603203, India  
<sup>2</sup>Department of Computer Science and Engineering, Sri Vishnu Engineering College for Women(A), West Godavari District Andhra Pradesh, Bhimavaram, India  
<sup>3</sup>Department of Information Technology, Sri Sai Ram Institute of Technology, Tamil Nadu, Chennai, India

**Abstract**

In recent years, deep learning-based networks have been able to achieve state-of-the-art performance in medical image segmentation. U-Net, one of the currently available networks, has proven to be effective when applied to the segmentation of medical images. A Convolutional Neural Networks (CNN) performance is heavily dependent on the network's architecture and associated parameters. There are many layers and parameters that need to be set up in order to manually create a CNN, making it a complex procedure. Designing a network is made more difficult by using a variety of connections to increase the network's complexity. Evolutionary computation can be used to set the parameters of

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Chen, S., Qiu, J., Zhang, H.  
Speech Fatigue Recognition under Small Samples Based on Generative Adversarial Networks and LSTM

(2024) International Journal of Pattern Recognition and Artificial Intelligence

Wang, X., Cheng, J., Jin, H.  
Research on Annual Runoff Prediction Model Based on Adaptive Particle Swarm Optimization-Long Short-Term Memory with Coupled Variational Mode Decomposition and Spectral Clustering Reconstruction

(2024) Water (Switzerland)

Huang, L., Cao, X., Ren, H.  
Identifying scientific problems and solutions: Semantic network analytics

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## Document details - IoT's role in smart manufacturing transformation for enhanced household product quality

IoT

Advanced Applications in Omnetic Computing

4 March 2024, Pages 252-289

### IoT's role in smart manufacturing transformation for enhanced household product quality (Book Chapter)

Ali, M.N., Sethi, T.S., Bakkiya, T., Hazan, D.S., Ganapathy, N.R.S., Boopathi, S.

<sup>a</sup>Department of Mechanical Engineering, Faculty of Engineering and Technology, Khoja Bandanowaz University, India  
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<sup>c</sup>Department of Management Studies, Sri Sairam Institute of Technology, India

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#### Abstract

The convergence of the Internet of things (IoT) and smart manufacturing technologies has revolutionized the way household products are designed, manufactured, and maintained. This chapter explores the pivotal role of IoT in the transformation of smart manufacturing processes to enhance household product quality. It delves into the various facets of this transformative journey, including data-driven insights, predictive maintenance, product customization, and sustainability. By harnessing the power of IoT, manufacturers can streamline operations, reduce costs, and ultimately deliver higher-quality household products that meet the evolving demands of consumers. © 2024, IGI Global. All rights reserved.

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- Facial emotion recognition using omnetic computing
- Role of omnetic computing in civil engineering
- Hydrate
- A secure image protection for IoT applications using watermarking technique and non-linear chaos enhancing rainfall prediction accuracy through fog computing: Integration of advanced algorithms and edge analytics
- From theory to practice: A comprehensive review of omnetic computing
- Speech emotion recognition with omnetic computing
- Omnetic-based supervision of EV healthcare monitoring and analysis using thingspeak iot platform

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## International Journal of Hydrogen Energy

Volume 52, Part C, 2 January 2024, Pages 1395-1407

### Maximizing efficiency and environmental benefits of an algae biodiesel-hydrogen dual fuel engine through operational parameter optimization using response surface methodology

Avedhoot Mohite<sup>a</sup>, Bhaskar Jyoti Bore<sup>a,\*</sup>, Prabhakar Sharma<sup>b</sup>, Bhaskar Jyoti Medhi<sup>c</sup>, Debabrata Barik<sup>d</sup>, Dinesh Balasubramanian<sup>e,f</sup>, Van Grass Nguyen<sup>g</sup>, Ferianda Josephin IS<sup>h</sup>, Huu Cuong Le<sup>i</sup>, J. Kamalakkannan<sup>j</sup>, Edwin Geo Veruvel<sup>k,l</sup>, Dao Nam Cao<sup>m</sup>

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- Algae Biodiesel-Hydrogen dual fuel resulted less emissions than

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- Performance optimization of a diesel engine fueled with hydrogen/biodiesel with water... Energy, Volume 243, Part C, 2021, Article 120808 Dongli Tan, ... Zhijiang Zhang

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Document details - Fake Currency Detection

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Volume 491, 21 February 2024, Article number 02030
2024 International Conference on Environmental Development Using Computer Science, ICECS 2024, Hybrid, Tamil Nadu, India, 11 January 2024 through 12 January 2024; Code 197852

**Fake Currency Detection(Conference Paper)(Open Access)**

Shomani, S.S., Nandhini, G., Varshini, R.S., Dhanni, T.

Department of Electronics & Communication Engineering, Sri Sai Ram Institute of Technology, Tamilnadu, Chennai, India

**Abstract**

Due to the great technological developments in the field of color printing in the past few years, it is becoming increasingly recognized that counterfeiting is a serious problem. It used to be possible and very simple for anyone to quickly prepare and print counterfeit currency notes using a computer and a laser printer at homes or places of employment. In the past, only printing houses had these facilities. The most crucial issue is now how to accurately distinguish fake currency from real currency using automatic machines. Almost all nations struggle greatly with the issue of counterfeit currency notes. But since counterfeiting has become such a pressing issue in India, it is thought to be the most serious issue there. Therefore, it is necessary to create a module that will aid in the quick and efficient recognition and detection of paper currency notes. An approach for the identification and verification of Indian currency is described in this proposed system. The authenticity of the currency will be verified using image processing methods, regardless of whether it is genuine. © 2024 E3S Web of Conferences

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Shorma, S., Jain, S., Saurabh  
Fake Currency Detection using Image Processing

(2024) 2024 International Conference on Intelligent Systems for Cybersecurity, IJCS 2024

Agosti, T.M., Gudeklo, A., Shonmugundaram, M.  
Machine Learning Paradigms for Counterfeit Currency Detection: A Comprehensive Comparative Study

(2024) 2024 3rd International Conference on Artificial Intelligence for Internet of Things, AIoT 2024

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Document details - Novel approaches to the degradation of nitrophenols using TiO<sub>2</sub>-biopolymer-ligand-metal complex as photocatalysts

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Journal of Materials Science: Materials in Electronics
Volume 35, Issue 8, March 2024, Article number 544

**Novel approaches to the degradation of nitrophenols using TiO<sub>2</sub>-biopolymer-ligand-metal complex as photocatalysts(Article)**

Anusha, B., Anbazhazhyan, M., Deepa, C., Srinivasan ayes Anusornker, N.

<sup>1</sup>Department of Physics, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, 600044, India  
<sup>2</sup>Department of Physics, SRM Valluvar Engineering College, SRM Nagar, Chengalpet, Tamil Nadu, Kattankulathur, 605203, India  
<sup>3</sup>Department of Physics, Sri Sai Ram Engineering College, Tamil Nadu, Chennai, 600064, India

**Abstract**

Nitrophenols has become a significant threat to the ecosystem and the health of the human beings. Photocatalytic degradation is considered to be the utmost competent approach for the amputation of nitroaromatic pollutants. In this research, 2-nitrophenol (MNP), 2,4-dinitrophenols (DNP), and 2,4,6-trinitrophenol or picric acid (PN) are taken for the degradation studies using the photo-Fenton catalyst of synthesized TiO<sub>2</sub> nanoparticle modified with biopolymer containing organic and inorganic functionalities. The morphological study reveals the uniformly distributed TiO<sub>2</sub> nanoparticles (15 nm) surfaces are encapsulated by the active site-rich chitosan-ligand-copper complex facilitating more absorption and enhancing the photocatalytic activity toward the target molecules. The UV spectra confirm the predominant shifting of

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Karwal, S., Bisi, S., Holey, R.  
Functional potential of chitosan-metal nanostructures: Recent developments and applications

(2024) International Journal of Biological Macromolecules

Singh, S., Kansal, S.K.  
Simultaneous Degradation of Organic Pollutants and Hydrogen Production Using Dual-Functional NH<sub>2</sub>-MIL-125(1)/Red Phosphorus Heterostructure under Solar Light Irradiation

(2024) Industrial and Engineering Chemistry Research

Khen, L., Shah, Y., Tariq, M.R.  
Understanding the Toxicity of trinitrophenol and promising

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Document details - Air Quality Data Prediction Using Data Analytics

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AIP Conference Proceedings
Volume 2742, Issue 1, 13 February 2024, Article number 020019
1st International Conference on Engineering, Medicine, Management, Arts and Sciences 2021, EMMA 2021, Virtual, Online, India, 29 December 2021 through 31 December 2021, Code 197221

**Air Quality Data Prediction Using Data Analytics(Conference Paper)(Open Access)**

Sidharshan, S.K., Kataloreson, Nancy, Shathik, A., Kavietha

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<sup>2</sup>Department of Information Technology, Sri Krishna College of Engineering and Technology, Tamilnadu, Coimbatore, India  
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**Abstract**

Air pollution is usually described as the release into the atmosphere of contaminants which are harmful to human health and the environment. It may be described as one of the most serious risks human beings have ever faced because to the growing more catastrophic problem of air pollution in the globe. A description is provided of how our air-quality sensor system is designed, implemented and optimised, which provides a live and fine-grained air quality map of the area under surveillance. The coverage joint failure in the generated real-time air quality map should be maintained to a minimal when unmeasured data values as part of the objective are deducted. In terms of studying the quality issue, Big Data Technology has been recommended to be utilised in order to organise the air quality sensing equipment sensing tasks appropriately. In addition, the prediction of air quality based on climatic conditions is explored using various machine learning techniques for the data given. © 2024

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Challenges of Globalization and Inclusivity in Academic Research
19 February 2024, Pages 162-185

**The power of visionary leadership in transforming the Indian education system (Book Chapter)**

Durairaj, M., Dix, S., Ezhilmath, K., Aneey, H.M., Joyalevi, S.M., Marugan, S.

<sup>1</sup>Department of English, Ferozshah Engineering College, Chennai, India  
<sup>2</sup>K.L. Business School, Koneru Lakshminarayana Educational Foundation, India  
<sup>3</sup>Department of English, Sri Sakram Institute of Technology, Chennai, India

View additional affiliations

**Abstract**

The book chapter explores the transformative potential of visionary leadership in India's education system, focusing on key themes such as leadership in education, policy reform advocacy, empowering educators, fostering innovation, inclusivity, engaging communities, and data-driven decision-making. It advocates for a holistic approach to education, focusing on diversity, accessibility, and quality. The chapter delves into the characteristics, strategies, and impact of visionary leaders in the Indian education sector, highlighting their ability to drive significant changes, innovation, and progress. It also discusses the challenges faced by these leaders and offers lessons to be learned. It is a must-read for educators, policymakers, and anyone interested in the future of education in India. © 2024 by IGI Global. All rights reserved.

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## Document details - Whale optimization algorithm based classification of normal and abnormal cries in infants

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AIP Conference Proceedings

Volume 2915, Issue 1, 3 May 2024, Article number 020904

3rd International Conference on Industrial Electronics, Mechatronics, Electrical and Mechanical Power, (EMPOWER 2022), Institute of Engineering and Management, Kolkata, India; 17 November 2022 through 19 November 2022; Code 199285

**Whale optimization algorithm based classification of normal and abnormal cries in infants**(Conference Paper)

Kanimozhi, K., Rabi, S.R.M., Thangappalan, L., Sangeetha, P.

<sup>1</sup>Department of Electrical and Electronics Engineering, NPR College of Engineering & Technology, Tamilnadu, Natham, India  
<sup>2</sup>Department of Mechanical Engineering, Rathnam Technical Campus, Tamilnadu, Coimbatore, India  
<sup>3</sup>Department of Computer Science Engineering, Sri Sai Ram Institute of Technology, Tamilnadu, Chennai, India

**Abstract**

Infants crying patterns are a means to communicate with the external world. Infants problems can be explored through their cry within first year. Significant changes in crying patterns give an idea about the neurological disorders, genetic problems and many more. The infant cry signal analysis is carried out to identify the cry causes like hunger, pain, discomfort, anxiety, etc. Different causes of infant crying are characterized by signals in the cry segments. In the proposed work a whale optimization algorithm is implemented to detect the emotion of the crying infant. The previous works include various algorithms for classification, however the novelty in this work can be attributed to processing

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## Document details - A comprehensive survey of machine learning based mobile data traffic prediction models for 5G cellular networks

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Volume 2816, Issue 1, 22 March 2024, Article number 100002

2021 International Conference on Advance Computing and Ingenious Technology in Engineering Science, (ICACITES 2021), Galgotias College of Engineering and Technology, Greater Noida, India; 30 December 2021 through 31 December 2021; Code 198313

**A comprehensive survey of machine learning based mobile data traffic prediction models for 5G cellular networks**(Conference Paper)(Open Access)

Mohan, R.K., Vijayalakshmi, K., Augustine, P., Venkatesh, R., Nayagam, M.G., Jegajothi, B.

<sup>1</sup>Dept of Electronics and Communication Science, Agurchand Manmull Jain College, Manambakkam, Tamil Nadu, Chennai, India  
<sup>2</sup>Computer Science and Engineering, Sri Sai Ram Institute of Technology, Sai Leo Nagar, West Tambaram, Chennai, India  
<sup>3</sup>Department of Information Technology, Sri Eshwar College of Engineering, Kandanampatti, Tamil Nadu, Coimbatore, India

[View additional affiliations](#)

**Abstract**

The advanced progression of mobile technology leads to a dramatic expansion in cellular data traffic (DT). Especially, the development of precise time series model in a 5G cellular network, becomes indispensable to increase the quality of services (QoS) and forecast cellular DT. The cellular DT predictive models allow the operator in adapting to the traffic demand of the networks with user experience and better resource usage. Furthermore, owing to the characteristics of the higher heteroscedasticity amongst a number of base stations with traffic load, the cellular DT

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EAI Endorsed Transactions on Perovskite Health and Technology  
 Volume 10, 15 January 2024

**An Innovative approach to Improve the Quality of Pharmaceuticals approach using Cloud Computing(Open Access)**

Vijayaraj, N., Rajalakshmi, D., Immaculate, P.S., Sathianarayanan, B., Rajeswari, S., Gomathi, S. et al.

\*Vai Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, India  
 \*SRM Institute of Science & Technology, Kattankulathur, Chennai, India  
 \*Sri Sairam Institute of Technology, Chennai, India

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**Abstract**

**INTRODUCTION:** Pharmaceuticals evolve alongside advancing technology driven by ongoing research and pharmaceutical companies' production of new medications. Ongoing research and adjustment are necessary for various aspects of the pharmaceutical sector, such as patient understanding, drug testing, manufacturing, and communication of complex concepts through technology. **OBJECTIVES:** This paper discusses the intersection of cloud computing, technological advancements, and healthcare applications. **METHODS:** The Azure Cloud facilitates data processing, customer and patient engagement, employee and core team empowerment, clinical and operational optimisation, and healthcare digital transformation in the pharmaceutical industry. The integration of Microsoft Azure cloud technologies bridge the

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Journal of Intelligent and Fuzzy Systems  
 Volume 46, Issue 1, 10 January 2024, Pages 543-561

**Long-term and short-term rainfall forecasting using deep neural network optimized with flamingo search optimization algorithm(Article)**

Vidya, S., Jaganathan, V., Guban, T., Kumar, J. et al.

\*Department of Computer Science and Engineering, Sri Sai Ram Institute of Technology, Tamil Nadu, Chennai, India  
 \*Department of Computer Science and Engineering, Sri Vishnu Engineering College for Women, Andhra Pradesh, Bhimavaram, India  
 \*Department of Information Technology, Kerapagam College of Engineering, Tamil Nadu, Coimbatore, India

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**Abstract**

Rainfall forecasting is essential because heavy and irregular rainfall creates many impacts like destruction of crops and farms. Here, the occurrence of rainfall is highly related to atmospheric parameters. Thus, a better forecasting model is essential for an early warning that can minimize risks and manage the agricultural farms in a better way. In this manuscript, Deep Neural Network (DNN) optimized with Flamingo Search Optimization Algorithm (FSOA) is proposed for Long-term and Short-term Rainfall forecasting. Here, the rainfall data is obtained from the standard dataset as Sathyavachary India Rainfall Analysis (IRA). Moreover, the Morphological filtering and Extended Empirical wavelet

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Draoui, A., Saidi, A., Allouche, B.  
 A novel global maximum power point tracking based on flamingo search algorithm for photovoltaic systems  
 (2025) International Journal of Electrical and Computer Engineering  
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## Document details - Identification of rheumatoid arthritis using bone image features with radial basis function neural networks

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International Journal of Emerging Systems and Technology  
 Volume 34, Issue 3, May 2024, Article number e23087

### Identification of rheumatoid arthritis using bone image features with radial basis function neural networks(Article)

Bose, A.S.C., Srinivasan, C., Surenderanath, S.

<sup>1</sup>Department of Industrial Engineering, College of Applied Sciences, AlMecarifa University, Riyadh, Saudi Arabia  
<sup>2</sup>Department of ECE, Sreevetha Engineering College, Chennai, India  
<sup>3</sup>Department of ECE, Sri Sairam Institute of Technology, Chennai, India

**Abstract**

Rheumatoid arthritis (RA) leads to the destruction, deformation, and loss of function and causes joint damages to 85% of patients. The detection of bone mineral density from traditional x-ray images consumes more time and it is observer dependent which decreases the evaluation performance when RA is in its early stage. Therefore, it is necessary to develop an observer-independent computer-aided automatic analysis system for evaluating JS narrowing. An efficient RA detection system based on feed-forward neural network is proposed in this article. Initially the dataset is preprocessed to remove blur, redundant data and non-linearities in RA images using Wiener filter in less computation time. The edge boundaries are detected using non-linear partial differential equation as the texture features of bones has great impact on the system accuracy. The detection strategy is implemented by optimized area-level co-occurrence matrix based on bone image features. The selected

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Materials Letters  
 Volume 362, 1 May 2024, Article number 136287

### Eco-friendly@one-pot-simultaneous oxygen and chlorine intercalation on graphite surface at low-cost(Article)

Jamies, L., Pichaimoni, J., Ramesh, P., Mani, N.

<sup>1</sup>Department of Chemistry, Sri Sri Ram Institute of Technology, West Tambaram, Tamil Nadu, Chennai, 600044, India  
<sup>2</sup>Department of Chemistry, Vivekanandha College of Arts & Sciences for Women, Tirchengode, Tamil Nadu, Namakkal, 637205, India  
<sup>3</sup>Department of Mechanical Engineering, Sri Sairam Engineering College, West Tambaram, Tamil Nadu, Chennai, 600044, India

**Abstract**

The production of in-situ chlorinated graphene oxide was accomplished in a single step without the use of hazardous reagent conditions. This eco-friendly method of producing chlorinated graphene oxide was created by combining the potent oxidizer H<sub>2</sub>SO<sub>4</sub> (Piranha) in place of H<sub>2</sub>SO<sub>4</sub> with NaClO<sub>2</sub> and m-CPBA. These techniques provide the major advantage of simultaneously intercalating chlorine and oxygen onto the surface of graphite by a one-step synthesis. The oxygen and chloride functionality were confirmed by spectral techniques (P-XRD, HR-TEM, XPS, Raman Spectro, FT-IR and TGA analysis). This is a one-pot synthesis method for generating Cl-GO materials for use in many industries. It is cost-effective, eco-friendly, simple and high scalable. The focus of our present study is on determining the way Cl-GO performs in supercapacitor applications. © 2024 Elsevier B.V.

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## Document details - Investigation of Mixed Electronic States in $Dy_3Fe_5O_{12}$ Produced by Doping with Nickel

DOI: 10.1007/s12209-024-10100-7

Journal of Cluster Science

Volume 25, Issue 2, February 2024, Pages 545-550

### Investigation of Mixed Electronic States in $Dy_3Fe_5O_{12}$ Produced by Doping with Nickel(Article)

Niruban Bharathi, R., Ramachandran, T., Rishidha, G.

<sup>1</sup>Department of Physics, Sri Sairam Institute of Technology, Tamil Nadu, West Tambaram, Chennai, 600944, India  
<sup>2</sup>Department of Physics, College of Science, United Arab Emirates University, P.O. Box 15551, Al-Ain, United Arab Emirates  
<sup>3</sup>Department of Physics, Science & Humanities, Chennai Institute of Technology, Sreethy Nagar, Chennai, Tamil Nadu, Kundrathur, 600069, India

**Abstract**

Rare earth lanthanide garnets are scientifically significant because the versatility of cation substitution in various geometrical locations results in adjustable and varied characteristics for magnetic devices and optoelectronics applications. In a rare earth lanthanide garnet, such as  $Dy_3Fe_5O_{12}$ , electronic states are very sensitive to substitutional effects. The objective of the current research was to synthesize garnet type  $Dy_3Fe_5O_{12}$  compound and optimal parameters of the hydrothermal method were determined. We present here a detailed experimental investigation of electronic states and their distribution across the sites in  $Dy_3Ni_xFe_{5-x}O_{12}$  compounds through X-ray photoelectron spectroscopy. Scanning electron microscope demonstrated that nanoparticles with whiskers morphology with the existence in soft agglomeration. The impact of nickel replacing the cubic formation of garnets was explored using X-ray diffraction and Fourier transform infrared spectroscopy. In addition, the

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Ramachandran, T., Roy, N., Hegazy, H.H. From graphene aerogels to efficient energy storage: current developments and future prospects

(2025) *Journal of Alloys and Compounds*

Verme, S., Reij, S. Cr-induced modifications in  $Dy_3Fe_5O_{12}$ : structural, magnetic, and electrical perspectives

(2024) *Journal of Materials Science: Materials in Electronics*

Kumar, V.A., Roy, N., Ramachandran, T. Shaping the future of energy: The rise of supercapacitors progress in the last five years

(2024) *Journal of Energy Storage*

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## Document details - Avian Identification: Utilizing Xception Algorithm for Bird Breed Discrimination

DOI: 10.1109/ICCEBT59414.2024.10545193

TQCEBT 2024 - 2nd IEEE International Conference on Trends in Quantum Computing and Emerging Business Technologies 2024

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2nd IEEE International Conference on Trends in Quantum Computing and Emerging Business Technologies, TQCEBT 2024, Pune, India; 22 March 2024 through 23 March 2024; Category number: CFP24QCJ-ART; Code: 202352

### Avian Identification: Utilizing Xception Algorithm for Bird Breed Discrimination(Conference Paper)

Raja, S.R., Suganthi, R., Vivekanandan, M., Vanitha, N., Vivekanandan, G., Yanu, N.

<sup>1</sup>Hindustan Institute of Technology and Science, (HITS), Centre for Open and Digital Education, Chennai, India  
<sup>2</sup>Sri Sai Ram Institute of Technology, Department of Computer Science and Engineering, Chennai, India  
<sup>3</sup>Rajalakshmi Institute of Technology, Artificial Intelligence and Data Science, Chennai, India

**Abstract**

In this ground breaking project, we delve into the fascinating realm of ornithology through an extensive dataset comprising 507 distinct bird breeds and a staggering 61,250 high-resolution images. Employing cutting-edge machine learning techniques, our aim is to develop a robust classification model capable of accurately identifying bird species based on visual attributes. The dataset, meticulously curated for diversity, spans a myriad of habitats, climates, and avian characteristics. Through this exhaustive collection, our model not only encapsulates the beauty of

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## Document details - Deep reinforcement learning based computing offloading in unmanned aerial vehicles for disaster management

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Journal of Electrical Engineering  
 Volume 25, Issue 2, 1 April 2024, Pages 94-101

**Deep reinforcement learning based computing offloading in unmanned aerial vehicles for disaster management** [Article] [\(Open Access\)](#)

Keelivan, A., Mohanram, N.J., Jashi, S., Sankar, U.

<sup>1</sup>Sri Sri Ram Institute of Technology, Chennai, India  
<sup>2</sup>SRM Institute of Science and Technology, Chennai, India  
<sup>3</sup>Rennietal Engineering College, Chennai, India

**Abstract**  
 The emergence of Internet of Things enabled with mobile computing has the applications in the field of unmanned aerial vehicle (UAV) development. The development of mobile edge computational offloading in UAV is dependent on low latency applications such as disaster management, forest fire control and remote operations. The task completion efficiency is improved by means of using edge intelligence algorithm and the optimal offloading policy is constructed on the application of deep reinforcement learning (DRL) in order to fulfill the target demand and to ease the transmission delay. The joint optimization controls the weighted sum of average energy consumption and execution delay. This edge intelligence algorithm combined with DRL network enables computing operation to increase the probability that at least one of the tracking and data transmission is usable. The proposed joint optimization significantly performs well in terms of execution delay, offloading

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## Document details - Solvatochromism effect on third-order NLO properties of Azo dye

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Journal of Optics (India)  
 Volume 53, Issue 1, February 2024, Pages 574-581

**Solvatochromism effect on third-order NLO properties of Azo dye** [Article]

Anusha, B., Jayaram, S.

<sup>1</sup>Department of Physics, Sri Sairam Institute of Technology, West Tambaram, Tamilnadu, Chennai, 600044, India  
<sup>2</sup>Department of Physics, Technological University, Ongur (PO), Tiruvananthapuram, 564305, India

**Abstract**  
 Third-order nonlinear optical (NLO) features of octyl black 32 (AB 32), an azo dye is examined by sensitive Z-scan method. Various polar solvents such as methanol, acetone, ethanol, water, DMF and DMSO are used to dissolve the dye sample with 0.01 mM concentration. A continuous wave diode laser operating at 650 nm wavelength is used to study the NLO properties of AB 32 dye. The influence of solvent spectral characteristics on linear absorption coefficient ( $\beta$ ) and NLO properties of AB 32 dye is studied and multi-parameter scale known as Kamlet-Akashi-Taft is used to analyze the solvent characteristics on solute molecule. The nonlinear refractive index ( $n_2$ ) and nonlinear absorption coefficient ( $\beta$ ) of AB 32 dye are calculated to be the order of  $10^{-11} \text{ cm}^2/\text{W}$  and  $10^{-7} \text{ cm}^2/\text{W}$ , respectively. The open aperture curve of AB 32 dye is displayed both positive and negative nonlinear absorption coefficient due to saturable and reverse saturable absorption, as well as negative value of  $n_2$  as a result of self-defocusing. The results projected that AB 32 dye is a suitable material for future NLO applications in photonics and optoelectronics. © The

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Moghad, M., Shafiq, N., Hussain, M.T.  
 Novel pyrimidine-anthraquinone dyes: Design, synthesis, textile applications & their computational SAR analysis  
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Ovlenko, V.M., Komarenko, D.O., Rankovych, A.V.  
 The substituent effect on pulsed laser beam self-action manifestations in azo-cyanomethine PMMA composites thin films in visible and near IR ranges  
 (2024) *Optical Materials*

Hussain, K.A., Sultan, H.A., Aljohar, A.A.-R.M.  
 Synthesis, characterization and nonlinear optical properties of new azo compound using CW laser beam

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## Document details - Sliding mode control with higher order strategy for buck converter in the presence of dynamic load

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in-Prime - Advances in Electrical Engineering, Electronics and Energy  
 Volume 6, December 2023, Article number 100339

**Sliding mode control with higher order strategy for buck converter in the presence of dynamic load**(Article)(Open Access)

Dhanoskar, R., Kamari, S.G.

<sup>1</sup>Associate Professor, Department of Electrical and Electronics Engineering, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, 600044, India  
<sup>2</sup>Professor, Department of Electrical and Electronics Engineering, College of Engineering, Guindy, Anna University, Tamil Nadu, Chennai, India

**Abstract**

The combination of DC-to-DC converters with DC machines for smooth beginning of DC drives has various practical applications. The Buck converter provides smooth start of the DC motor by applying desired voltage in accordance with the control signal. This paper proposes a Higher Order Sliding Mode (HOSM) based control algorithm for the speed control of Permanent Magnet DC (PMDC) motor with Buck converter under different loaded conditions. This control algorithm minimizes the initial peak current and provides smooth speed control with load changes. The performance of proportional integral derivative sliding surface is compared with classical sliding surface for constant load torque through Matlab simulation. In proportional integral derivative sliding surface (PIDSS), the integral component aids in the elimination of steady-state

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Montoya-Acevedo, D., Gil-González, W., Domínguez-Martínez, O.  
 Adaptive Speed Control for a DC Motor Using DC/DC Converters: An Inverse Optimal Control Approach  
 (2024) IEEE Access

García-Chavez, R.E., Ortiz-Quintana, A.A., Silva-Ortigoza, R.  
 Sliding Mode and PI-Based Control for the ITO3 Full-Bridge Buck Inverter-DC Motor System Powered by Renewable Energy  
 (2024) IEEE Access

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## Document details - Salen complex of amino alcohol incorporated in two-dimensional matrices for supercapacitor applications

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Materials Chemistry and Physics  
 Volume 310, 1 December 2023, Article number 128495

**Salen complex of amino alcohol incorporated in two-dimensional matrices for supercapacitor applications**(Article)

Alvin Kalicharan, A., Rajesh, V., Pitchaimoni, J., Rajalakshmi, A., Kothireson, S., Koutavarepu, R., Tomson, M.R., Ramesh, R.

<sup>1</sup>Department of Chemistry, Panimalar Engineering College, Tamil Nadu, Chennai, 600123, India  
<sup>2</sup>Department of Chemistry, V.R. Siddhartha Engineering College, Kanuru, Andhra Pradesh, Vijayawada, 520007, India  
<sup>3</sup>Department of Chemistry, Sri Sai Ram Institute of Technology, West Tambaram, Tamil Nadu, Chennai, 600044, India

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**Abstract**

In this study, we synthesized a covalently bound amine and an alcohol-functionalized graphite material from reactions between the aromatic alcohol salicylaldehyde and aliphatic amine diethyl triamine. Various physicochemical techniques were used to analyze the amine- and alcohol-functionalized graphene oxide [20]. The primary amine functionality on the GO surface widened the interlayer space. The incorporation of free amines and oxygen functionalities, assisted by the GO material, onto the GO electrode surface was employed for additional surface

**Cited by 2 documents**

Vijaya, N., Sujitha, S., Shankar, A.  
 ZIF-67 derivatives of Ni-Co2S4 Decorated in Salen-Complex Amine Functionalization GO Layers for High-Performance Applications in Supercapacitor Devices  
 (2024) Lumbinescence

Kalicharan, A., Pitchaimoni, J., Barath Kannu, C.  
 Green Chemistry Approach for One-Step Synthesis of Indinastil Graphene Material for Supercapacitor Applications  
 (2024) ChemistrySelect

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## A promising nonlinear optical feature in natural green dye for optical limiting applications

Research Article | Published: 28 March 2024  
(2024) [Cite this article](#)

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**B. Anusha, Sandhanasamy Devanesan, Mohamad S. AlSalhi, G. Murali, M. Vimalan, S. Madhu & S. Jeyaram**

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### Abstract

Third-order nonlinear optical (NLO) features of *chlorophyll*, a natural green dye is obtained from *Coleus amboinicus* is reported herein for the first time. The natural dye is characterized by UV-Visible, FT-IR and gas chromatography mass spectrum. Third-order NLO parameters such as nonlinear refractive index ( $n_2$ ) and nonlinear absorption coefficient ( $\beta$ ) are measured by facile Z-scan method using closed aperture and open

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## Document details - Neuro Computing-Based Models of Digital Marketing as a Business Strategy for Bangalore's Startup Founders

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3rd IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing, INCOS 2024, Krishnankali, Virudhunagar, India, 14 March 2024 through 16 March 2024; Category numberCFP24G37-ART; Code 199577

**Neuro Computing-Based Models of Digital Marketing as a Business Strategy for Bangalore's Startup Founders(Conference Paper)**

Bakkiya, T., Maniandan, M., Ch, R.K., Krishnamoorthi, M., Ramu, M., Venkatesh, P.

<sup>1</sup>Sri Sairam Institute of Technology, Chennai, India

<sup>2</sup>Kristu Jayanti College, Department of Commerce (UG), Bangalore, India

<sup>3</sup>Kristu Jayanti College, Faculty of Commerce and Management, Bangalore, India

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**Abstract**

Large amounts of data are perfect for artificial intelligence. Women are more suited to and capable of doing this activity than males are. The use of AI in digital marketing is rapidly expanding. Predicting user behaviour, search cycles, and other aspects of digital marketing will be lot simpler with the aid of artificial intelligence. Perhaps this will enhance the efficiency of business websites. Using AI, companies may streamline their content creation processes. The actual world may be impacted by corporate marketing. Innovative methods of attracting and maintaining

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4th International Conference on Innovative Practices in Technology and Management, ICIPIM 2024; Noida, India; 21 February 2024 through 23 February 2024; Category numberCIP24IAC-ART; Code 209544

**IoT and Hydrogen Transport: Revolutionizing Fuel Cell Vehicle Infrastructure(Conference Paper)**

Priya M. PA., Karthikeyan, P., Anshree, N., Hariharan, M., Ramadevi, K., Marugen, S.

<sup>1</sup>Sri Sairam Institute of Technology, Tamil Nadu, Chennai, India  
<sup>2</sup>Theanthi Homi Bhabha College, Tamil Nadu, Perambalur, India  
<sup>3</sup>Sri Institute of Science and Technology, Tamil Nadu, Chennai, India

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**Abstract**

The Internet of Things (IoT) in hydrogen transport and fuel cell vehicle infrastructure is a fundamental transformation. This work discusses how IoT devices transformed the system efficiently. By connecting IoT devices, this infrastructure improves effectiveness, security, and sustainability. Hydrogen sensors monitor storage, pipelines, and filling stations to optimize hydrogen supply. Flow meters control distribution and consumption, while pressure and temperature sensors maintain safety. Performance data from vehicle telematics optimizes fuel usage and

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Chitra, L., Selvakumar, G., Prakash, S.  
 A Comprehensive Analysis of Integrated Photovoltaic and Flywheel Energy Storage Systems

(2023) Proceedings of the 5th International Conference on Smart Electronics and Communication, ICSEEC 2024

Rajasekaran, M., Sekar, S., Manikandrababu, K.  
 Next-Gen Coaching: IoT and Linear Regression for Adaptive Training Load

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Telecommunications and Radio Engineering (English translation of *Elektronnyiye i Radiotekhnika*)  
 Volume 83, Issue 2, 2024, Pages 65-77

**INTELLIGENT AUTONOMOUS PARKING SYSTEM INTEGRATING RFID AND IoT FOR SMART CITIES(Article)**

Pudhira Rani, D., Prasanna, R., Surenderanath, S., Kobikavi, V.K.G., Veishnav, V., Rithika, R.

<sup>1</sup>Department of Electronics and Communication Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
<sup>2</sup>Department of Electronics and Communication Engineering, SRM Institute of Science and Technology, Ramapuram Campus, Chennai, India  
<sup>3</sup>Department of Information Technology, Sri Sai Ram Engineering College, Chennai, India

**Abstract**

An autonomous parking system is the essential innovation for stress-free car parking in smart cities. The efficient use of resources is a key goal of smart cities, and their integration with technology has improved productivity and dependability for urban infrastructures. In this paper, an efficient automated parking system integrating Internet of Things (IoT) and radio frequency identification (RFID) technologies is proposed. The proposed system is integrated with IoT in which the consumers can book the parking spots before arriving to the destination—drastically reducing the time taken by the consumers in searching for the parking slot. The proposed system effectively saves time for the consumers and also significantly provides solutions for all the parking-related issues faced by the management of flats, theaters, malls, hospitals, etc. In

**Cited by 1 document**

Ramkumar, G.  
 A Logical Application of Deep Learning Methodology for an Intelligent Parking System for Smart Cities Using Internet of Things Association

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## Document details - Machine Intelligence in Mechanical Engineering

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Machine Intelligence in Mechanical Engineering
1 January 2024, Pages 1-429

**Machine Intelligence in Mechanical Engineering**  
(Book)

Palani Kumar, K., Natarajan, E., Ramesh, S., Davini, J.P.

\*Department of Mechanical Engineering, Sri Sivasubramanian Institute of Technology, Tamil Nadu, Chennai, India  
 \*Department of Mechanical Engineering, Engineering, Technology and Built Environment, UCSI University, Kuala Lumpur, Malaysia  
 \*Department of Mechanical Engineering, Janszlam College of Engineering, Tamil Nadu, Chennai, India

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**Abstract**

Machine Intelligence in Mechanical Engineering explores the latest applications of machine intelligence and data-driven decision-making in mechanical engineering industries. By providing introductory theory, troubleshooting case studies, detailed algorithms and implementation instructions, this interdisciplinary book will help readers explore additional applications in their own fields. Those with a mechanical background will learn the important tasks related to preprocessing of datasets, feature extraction, verification and validation of machine learning models which unlock these new methods. Machine Intelligence is currently a key topic in industrial automation, enabling machines to solve complex engineering tasks and driving efficiencies in the smart production line. Smart preventative maintenance systems can prevent machine downtime, smart monitoring and control can produce more effective workflows with less human intervention. © 2025 Elsevier Inc. All rights reserved.

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- Application of augmented reality and virtual reality technologies for maintenance and repair of automobile and mechanical equipment
- Application of machine vision technology in manufacturing industries—a study
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2nd International Conference on Computer, Communication and Control, ICC4 2024; Indora, India; 8 February 2024 through 10 February 2024; Category number/F20(N23-ART) Code 198620

**Cybernated Watermarking Approach on Image with Cryptographic Encryption(Conference Paper)**

Sivasankari, R., Veeramakali, T., Mustafa Nowaz, S.M., Prakash, P., Umadevi, P., Alvin Anay, A.

\*B.S. Abdul Rahman Crescent Institute of Science and Technology, Dept. of Computer Science and Engineering, India  
 \*Srm Institute of Science and Technology, School of Computing, Dept of Data Science and Business Systems, Tamilnadu, Kattankulathur, India  
 \*Sri Sai Ram Institute of Technology, Dept of Computer Science and Engineering, India

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**Abstract**

Digital watermarking of interactive media content has become an active experimentation field in recent years. In addition to reviewing some of the methods that have been developed for various media types, a general structure for watermark grafting and identification is outlined. We highlight a few of these application-oriented differences, including copyright protection, substantiation, tamper identification, and data hiding, as well as the technological and system conditions for different media types such as digital photos, digital files, digital audio, and text. We

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Volume 233, 2024, Pages 343-352

5th International Conference on Innovative Data Communication Technologies and Application, ICIDCA 2024, Coimbatore, India; 10 January 2024 through 11 January 2024; Code 159107

**A Novel Predictive Analysis and Classification of Land Subsidence Vulnerability Mapping based on GIS using Hybrid Optimized Machine Learning Techniques and Computer Vision(Conference Paper)(Open Access)**

Senthil, G.A., Prabha, R., Arun, M., Sahaya Anand Nisha, A., Prabu, S.

<sup>1</sup>Department of Information Technology, Agni College of Technology, Chennai, India  
<sup>2</sup>Department of Electronics and Communication Engineering, Sri Sairam Institute of Technology, Chennai, India  
<sup>3</sup>Department of Electronics and Communication Engineering, Panimalar Engineering College, Chennai, India

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**Abstract**

Land subsidence is a natural disaster caused by the extraction of the earth's material strength on the surface that causes the earth's surface to settle and sink. Land subsidence can also result in significant financial losses since it causes structural damage and expensive maintenance costs for roads, trains, bridges, pipelines, ground water, oil, natural gas, mines, and buildings. The Geographic Information System (GIS) and Google Earth Platform (GEP) can be used to map this land subsidence. This provides a comprehensive view of land pattern subsidence and its interactions with other geographical elements. It applies to both progressive subsidence caused by fluid extraction (groundwater, oil, or natural gas) and rapid surface subsidence caused by the collapse of an underground mine. Risk mitigation is the most effective way to deal with the experimental model. This research study focuses on the use of Predictive Data Analysis (PDA), a powerful environment in data analytics that provides a set of tools that make it easier to evaluate optimal models. The proposed model makes use of a dataset that includes specific land subsidence circumstances as input. The predictive model is enhanced using a hybrid machine learning technique to reduce the number of iterations.

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Document details - A Review on Wideband High-Gain Low-THz Antennas for Wireless Applications

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18th INDIACOM, 11th International Conference on Computing for Sustainable Global Development, INDIACOM 2024; New Delhi; India; 28 February 2024 through 1 March 2024; Category numberCSP2483W-ART; Code 1598964

**A Review on Wideband High-Gain Low-THz Antennas for Wireless Applications(Conference Paper)**

Srinivasan, D., Pratikumar, M., Deepa Naveetha, S., Dhilipkumar, P., Parameswari, S., Chowdary, M.K.

<sup>1</sup>Centre for Blockchain and Cybersecurity, Sri Eshwar College of Engineering, Department of Computer and Communication Engineering, Coimbatore, India  
<sup>2</sup>Sri Sairam Institute of Engineering and Technology, Department of Electronics and Communication Engineering, Dindigul, India  
<sup>3</sup>VIT University, School of Computer Science and Engineering, Chennai, India

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**Abstract**

In this article, the potential of low-terahertz (THz) technology is discussed to present high data rates in future biomedical systems, and also in the 6G mobile system. However, due to the loss, the design of high-gain antennas is crucial to overcome power limitations and compensate for the additional path loss. This article highlights recent developments in wideband and high-gain sub-mm-wave and low-THz antennas and their

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Machine Intelligence in Mechanical Engineering
1 January 2024, Pages 43-49

**Application of augmented reality and virtual reality technologies for maintenance and repair of automobile and mechanical equipment (Book Chapter)**

Prathibha, S., Palanikumar, K., Ponchannugakumar, A., Ravikash Kumar, M.

<sup>1</sup>Department of Information Technology, Sri Sairom Engineering College, Tamil Nadu, Chennai, India  
<sup>2</sup>Department of Mechanical Engineering, Sri Sairom Institute of Technology, Tamil Nadu, Chennai, India

**Abstract**

Emerging technologies like 3D printing, Industrial IoT, artificial intelligence, and reality technologies augmented reality (AR) and virtual reality are considered to reshape the manufacturing industry. Out of these industry 4.0 technologies, AR/VR promises replacement of manpower in the mechanical engineering field through automation. Mechanical engineering requires large manpower to do routine processes like machine assembly and product maintenance, provide support services for the product, and develop complex designs using computer-aided design.

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## Document details - Optimizing User Satisfaction and Streamlining Operations in Online Retail Using CNN Algorithm

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2nd IEEE International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics, ICIITCEE 2024, BNM Institute of Technology Bangalore, India, 24 January 2024 through 25 January 2024, Category number:CFP24DAJ-ART; Code 198276

**Optimizing User Satisfaction and Streamlining Operations in Online Retail Using CNN Algorithm (Conference Paper)**

Rayavel, P., Senthil Kumar, K.S., Sarah Rachel, S., Sushmitha, K., Anjaly, P.

<sup>1</sup>Sri Sairom Institute of Technology, Chennai, India  
<sup>2</sup>Vellore Institute of Technology, Vellore, India

**Abstract**

The rising trend of online shopping has become increasingly prevalent in today's generation. With the convenience of browsing and purchasing products from the comfort of one's own home, it has reshaped the way people shop. In this digital age, having a dedicated shopping app has become a necessity for businesses looking to tap into this growing market. These apps offer seamless navigation, personalized recommendations, and secure payment options, catering to the preferences and expectations of today's tech-savvy consumers. As the world continues to embrace e-commerce, the need for user-friendly shopping apps remains essential for both consumers and businesses alike.

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Mathematical Problems in Engineering  
 Volume 2024, 2024, Article number 5540959

**Total Face Irregularity Strength of Certain Graphs(Article)(Open Access)**  
 Emilet, D.A., Paul, D., Jayagopal, R., Arackkalam, M.

<sup>1</sup>Department of Mathematics, Hindustan Institute of Technology and Science, Chennai, 603105, India  
<sup>2</sup>Department of Mathematics, Sri Sairam Institute of Technology, Chennai, 600044, India  
<sup>3</sup>School of Advanced Sciences, Vellore Institute of Technology, Chennai, 600127, India

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**Abstract**  
 The edge  $k$ -labeling  $\psi$  of  $G$  is defined by a mapping from  $EG$  to a set of integers  $1, 2, \dots, k$ , where the integer weight assigned to the vertex  $x \in VG$  is given as  $w_\psi(x)$ , such that the sum is taken over every vertex  $y$  of  $VG$  that is adjacent to  $x$  and the integer weights of adjacent vertices must be distinct for all vertices with any. An irregular assignment of  $G$  using atmost  $k$  labels which is considered to be a minimum  $k$  is defined as Irregularity strength of a graph  $G$  and can be denoted as  $is(G)$ . There are also further works on familiar irregular assignments, such as edge irregular labelings, vertex irregular total labelings, edge irregular total labelings, and face irregular entire  $k$ -labelings of plane graphs. A plane graph can be defined as a graph that is embedded in the plane in which no two lines will be intersected. In a plane graph the number of regions present are called faces and we denote it as  $F$ . The concept of total face irregularity strength is defined by the motivation of irregular networks and entire irregular face  $k$ -labeling. In our paper, we have obtained a minimum bound for the total face irregularity strength of two-connected plane graphs like cycle-of-ladder,  $C$ -necklace graph,  $P$ -necklace graph, sibling tree, and triangular graph. © 2024 D. Ahme Emilet et al.

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Machine Intelligence In Mechanical Engineering  
 1 January 2024, Pages 279-301

**Secure cloud web application in an industrial environment: a study**  
 (Book Chapter)  
 Lathé, B., Gopinath, B., Palanikumar, K.

<sup>1</sup>Department of Computer Science and Engineering, Sri Sairam Engineering College, Tamil Nadu, Chennai, India  
<sup>2</sup>Data Consultancy Services, Tamil Nadu, Chennai, India  
<sup>3</sup>Department of Mechanical Engineering, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, India

**Abstract**  
 Every piece of data is moving to cloud servers in the majority of industry sectors in an effort to decrease infrastructure and storage on physical devices. However, data can be accessed and stolen by dishonest or unscrupulous people. Since they cannot work and deliver on time, it may have an impact on certain industrial sectors and personnel. Modern techniques such as the SHAKE-256 (Secure Hash Algorithm 4 Keccak) hashing algorithm and anti-forgery token were suggested in this article to secure the application in numerous industries. Additionally, it helps to prevent hackers. © 2024 Elsevier Inc. All rights reserved.

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- Application of augmented reality and virtual reality technologies for maintenance and repair of automobile and mechanical equipment
- Application of machine vision

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## Document details - Mechanical and tribological behavior of pineapple leaf and kenaf fiber reinforced vinyl ester hybrid composites

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Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering  
2024

**Mechanical and tribological behavior of pineapple leaf and kenaf fiber reinforced vinyl ester hybrid composites**  
(Article in press ?)

Jothiprakash, V.M., Gurijala, C., Sethish, K., Balachandor, M., Sakthi Sathasivam, R.M. &

<sup>1</sup>Department of Mechanical Engineering, Easwari Engineering College, Tamilnadu, Chennai, India  
<sup>2</sup>Department of Mechanical Engineering, Anna University, Tamilnadu, Chennai, India  
<sup>3</sup>Department of Mechanical Engineering, Sri Sairam Institute of Technology, Tamilnadu, Chennai, India

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**Abstract**

The modern world demands the implementation of natural fiber-based polymer composites over synthetic fiber composites due to their eco-friendly nature, abundant availability, competing strength, economical favorability, and lightweight quality. In this present investigation, varied combinations of hybrid pineapple leaf fiber (PALF) and kenaf fiber-reinforced vinyl ester composites were fabricated by compression molding technique. The physical properties, mechanical properties, and tribological behavior were experimentally analyzed and reported. The physical

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Sethupathi, M., Khamala, M.V., Srikana, S.J.  
Recent Developments of Pineapple Leaf Fiber (PALF) Utilization in the Polymer Composites—A Review  
(2024) Separations

Seal, B., Chaudhary, V., Sathu, S.D.  
Studies on fatigue, creep, and tribological performance of coconut shell, cashew, and eggshell fiber-based bio-fiber-reinforced epoxy hybrid composites  
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Electric Power Components and Systems  
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**Design of a Method for Analyzing Power Systems: Mathematical Models of Electric Vehicles and Distributed Generators**  
(Article in press ?)

Sivarejwari, S., Almulki, A.A., Saibab Hamza, M., Ali, A.A., Hussain, M.A., Al-Tameemi, A.R., Gorp, I. &

<sup>1</sup>Department of Electrical and Electronics Engineering, Sri Sairam Institute of Technology, Chennai, India  
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<sup>3</sup>Al-Esraee University College, Baghdad, Iraq

View additional affiliations

**Abstract**

Electric vehicles (EV) have significantly increased in recent years due to a growing awareness of the effects of polluting gases produced by combustion engines. The use of electric vehicles produces no emissions, making them a much more environmentally friendly alternative to traditional combustion engines. In addition, the price of EVs has decreased significantly in recent years, making them more affordable for consumers. The use of distributed generation (DG), an alternative source of energy for power systems, should also be considered. This study proposes a methodology for incorporating DG and EVs into electric power systems. Power can be generated by DG directly where needed, while

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1 of 1

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Optik

Volume 295, December 2023, Article number 271433

**Retraction notice to "An optimization based feature extraction and machine learning techniques for named entity identification" [Optik 272 (2023) 170348] (Optik (2023) 272, (S0030402622016060), (10.1016/j.ijleo.2022.170348))(Erratum)(Open Access)**

Govindarajan, S., Mustafa, M.A., Kirosov, S., Duong, N.D., Nago Raju, M., Gole, K.K.

<sup>a</sup>Department of ECE, Sri Sairam Institute of Technology, Chennai, India  
<sup>b</sup>Department of Medical Laboratory Technology, Imam Ja'afar Al-Sadiq University, Iraq  
<sup>c</sup>The Department of Tax and Tareqian, Tashkent Institute of Finance, Tashkent, Uzbekistan

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## Document details - Machinability evaluation of magnesium composite using response surface methodology and nature-inspired metaheuristic algorithms

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International Journal on Interactive Design and Manufacturing

2024

**Machinability evaluation of magnesium composite using response surface methodology and nature-inspired metaheuristic algorithms**  
 (# Article in press ?)

Dhinakarraj, C.K., Santhikumar, N., Palanikumar, K., Deepanraj, B. &

<sup>a</sup>Adhiparasakthi Engineering College, Tamil Nadu, Melmaruvathur, 603319, India  
<sup>b</sup>Sreevetha School of Engineering, Sreevetha Institute of Medical and Technical Sciences, Tamil Nadu, Chennai, 602205, India  
<sup>c</sup>Sri Sai Ram Institute of Technology, Tamil Nadu, Chennai, 600044, India

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**Abstract**

Hard particles in composite hinder the machining process, thereby increasing cutting temperatures and forces; machining optimization will improve the conditions the industrial sector may reap. The proposed work presents the end-milling machining studies on the fabricated magnesium composite; AZ31 alloy is reinforced with 10 wt% of silicon nitride (Si<sub>3</sub>N<sub>4</sub>) using the vacuum stir-squeeze casting technique. Central composite design (CCD) of response surface methodology (RSM) was considered to design the experiments. According to observation, the cutting

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Tamil Selvan, M., Samesunderam, M., Raja Anandolai, A.

Optimizing dry milling of nitro-coat and heat-treated AZ80 magnesium alloy using multi-stage criteria optimization technique: an experimental study

(2024) Scientific Reports

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## Document details - Machine intelligence in mechanical engineering: an introduction

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Machine Intelligence in Mechanical Engineering
1 January 2024, Pages 1-12

**Machine intelligence in mechanical engineering: an introduction**  
 (Book Chapter)

Notarajan, E., Palanikumar, K., Ramesh, S., Davim, J.P., Kumar, K.

<sup>1</sup>Department of Mechanical Engineering, Engineering, Technology and Built Environment, UCSI University, Kuala Lumpur, Malaysia  
<sup>2</sup>Department of Mechanical Engineering, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, India  
<sup>3</sup>Department of Mechanical Engineering, Jerusalem College of Engineering, Tamil Nadu, Chennai, India

[View additional affiliations](#)

**Abstract**

Machine intelligence is deployed by integrating sensory devices, machine vision, and artificial intelligence into the operation of the system. It can be employed in any real-time application. Artificial intelligence is employed to monitor and control the operations by taking the required decisions. The use of machine intelligence can be from small scale to robust autonomous production systems. After Industry 4.0 and technological advancements attracted the attention of the industrialists, many notable research and product developments have been done in the past few years. This article aims to showcase some of the notable implementations being conducted in mechanical engineering. © 2024 Elsevier Inc. All rights reserved.

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Machine intelligence in mechanical engineering: an introduction

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Preface

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## Document details - Optical characterization of riboflavin as a potential biomarker in the diagnosis of cervical cancer

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Progress in Biomedical Optics and Imaging - Proceedings of SPIE
Volume 12836, 2024, Article number 128360H
Optical Biopsy XXII: Toward Real-Time Spectroscopic Imaging and Diagnosis 2024; San Francisco, United States; 19 January 2024 through 31 January 2024; Code 199694

**Optical characterization of riboflavin as a potential biomarker in the diagnosis of cervical cancer**  
 (Conference Paper)

Rajasekaran, R., Brindha, E., Bhojanicharan, G., Manjey, S.G., Aruna, P., Ganesan, S.

<sup>1</sup>Department of Physics, Sri Sairam Institute of Technology, Chennai, 600 044, India  
<sup>2</sup>Department of Physics, Sri Sairam Engineering College, Chennai, 600 034, India  
<sup>3</sup>Department of Medical Physics, Anna University, Chennai, 600 023, India

[View additional affiliations](#)

**Abstract**

Urine is one of the diagnostically important bio fluids, as it has many metabolites and some of them are native fluorophores. Riboflavin and its cofactors FMN and FAD which act as electron carriers participates in a diversity of redox reactions central to human metabolism. It has been reported that riboflavin plays a prominent role in progression of various cancers. It is well documented that, the Fluorophore Flavins that is not bound to proteins in the plasma is filtered by glomerulus and excreted in urine. Fluorescence spectroscopy has been considered as a promising

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Current Organic Synthesis

Volume 21, Issue 3, 2024, Pages 263-273

Degree Descriptors and Graph Entropy Quantities of Zeolite ACO(Article)

Liu, J.-B., Arackiaraj, M., Paul, D., Clement, J., Zhao, X., Tipoo, S.

<sup>1</sup>School of Mathematics and Physics, Anhui Jiaohu University, Hefei, 230601, China  
<sup>2</sup>Department of Mathematics, Loyola College, Chennai, 600034, India  
<sup>3</sup>Department of Mathematics, Sri Sairam Institute of Technology, Chennai, 600044, India

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**Abstract**

Background: Cheminformatics is a fascinating emerging subfield of chemical graph theory that studies quantitative structure-activity and property relationships of molecules and, in turn, uses these to predict the physical and chemical properties, which are extremely useful in drug discovery and optimization. Knowledge discovery can be put to use in pharmaceutical data matching to help in finding promising lead compounds. Materials and Methods: Topological descriptors are numerical quantities corresponding to the chemical structures that are used in the study of these phenomena. Results: This paper is concerned with developing the generalized analytical expression of topological descriptors for zeolite ACO structures with underlying degree and degree-sum parameters. Conclusion: To demonstrate improved discrimination power.

Cited by 3 documents

Yang, H., Hanif, M.F., Siddiqui, M.K.  
 On analysis of topological indices and heat of formation for benzyl sulfamoyl network via curve fitting model.  
 (2024) *Scientific Reports*

Hassan, M.M., Pan, X.-F.  
 Molecular structure of DNA via Zagreb connection descriptors  
 (2024) *European Physical Journal E*

Jacob, K., Clement, J.  
 Topological entropy characterization of zeolite ECI and its application in predicting molecular interactions  
 (2024) *European Physical Journal Plus*

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Document details - Evaluation of the Compression Properties of 3D Printed EPA-GF TPMS Structures

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Springer Proceedings in Materials

Volume 36, 2024, Pages 237-249

Evaluation of the Compression Properties of 3D Printed EPA-GF TPMS Structures(Book Chapter)

Jeyanthi, S., Prabhu, R., Arunkumar, R., Ramani, N., Kumar, S.V., Lal, L.P.

<sup>1</sup>School of Mechanical Engineering, VIT Chennai Campus, Chennai, 600127, India  
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<sup>3</sup>Department of Mechanical Engineering, Sri Sairam Institute of Technology, Chennai, 600044, India

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**Abstract**

3D printed minimal surface structures have received considerable research interest in the past decade and are proposed for many multidisciplinary applications. The mechanical performance of these structures is significantly affected by their structural configuration, materials, and 3D printing parameters. To explore the behavior of structural profiles, four different designs were developed and 3D printed from ePA-GF materials using a fusing filament fabrication and evaluated by axial compression experiments at a quasi-static straining rate. The experimental results provide insight into the compression properties, plastic deformation, and failure mechanism of short fiber reinforced structures. The results of axial compression experiments revealed that unit cell topology plays an important role in unit cell selection and design. It has been found that the Diamond structure has the highest compressive modulus and energy absorption capacity, while the Primitive structure has the lowest range of compressive modulus and energy absorption capacity. However, the Primitive structure recorded the lowest induced stress and highest efficiency among all other designs. Fiber pull-out and fracture was observed on induced cracks in the structure, which

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Rayjadhav, S.B., Kubade, P.R.  
 Polyamides: Comprehensive Insights into Types, Chemical Foundations, Bonding Techniques and Versatile Applications  
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## Document details - Application of machine vision technology in manufacturing industries—a study

Machine Intelligence in Mechanical Engineering  
1 January 2024, Pages 93-122

### Application of machine vision technology in manufacturing industries—a study (Book Chapter)

Palanikumar, K., Natarajan, E., Panshonnugakumar, A.

\*Department of Mechanical Engineering, Sri Sakthi Institute of Technology, Tamil Nadu, Chennai, India  
\*Department of Mechanical Engineering, Engineering, Technology and Built Environment, UCST University, Kuala Lumpur, Malaysia

#### Abstract

Machine vision is the set of data and techniques used to conduct image-based automated inspections for quality checks, process monitoring, and industrial automation. Machine Vision (MV) is utilized for optical gauging, quality control, sorting, component assembly inspection, presence or absence recognition, and process industries management. These are some possibilities for completing a task. Verifying components with machine vision technology helps ensure quality and keep the process operating smoothly. Process control, specialized applications, the pharmaceutical industry, the food and beverage industry, the electronic packaging industry, and the automobile industry, to name a few, all use machine vision technologies. This article discusses how to acquire measurements, rearrange optical characters, regulate a process with image processing, and identify whether final product components are on or off the assembly line. The major goal of this research is to raise public knowledge of machine vision technologies. This will result in greater production quality, less scrap/poors as a result of nonconformities caused by the use of machine vision to manage the manufacturing process, and the end of any value-added work done on scrap product during succeeding manufacturing stages. Each of these goals corresponded to a research goal. In other words, this technology will increase manufacturing quality while minimizing product waste owing to non-conformance difficulties. Most strategies outlined in this article, and the

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- Application of augmented reality and virtual reality technologies for maintenance and repair of automobile and mechanical equipment
- Application of machine vision technology in manufacturing industries—a study
- Estimation of wing stall delay characteristics with outward dimples

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## Document details - Botanic Alchemy: Cultivating Insight through Extensive Plant Disease Dataset and Reweighted Visual Analysis

2024 2nd International Conference on Computer, Communication and Control, ICC4 2024  
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2nd International Conference on Computer, Communication and Control, ICC4 2024, Indore, India, 8 February 2024 through 09 February 2024; Category numberCF20423-ART; Code 198620

### Botanic Alchemy: Cultivating Insight through Extensive Plant Disease Dataset and Reweighted Visual Analysis (Conference Paper)

Mustafa Nowaz, S.M., Mcherejan, K., Anand, J.V., Malathi, G.

\*School of Computing Kaleshiyam Academy of Research and Education, Department of Computer Science and Engineering, Tamil Nadu, India  
\*J.N.N Institutes of Engineering, Department of Electronics and Communication Engineering, Tamil Nadu, India  
\*Sri Sai Ilem Institute of Technology, Department of Computer Science and Engineering, Kanchipuram, Tamil Nadu, Chennai, India

#### Abstract

Diagnosing plant diseases research tackles the vital challenge of identifying plant diseases in agriculture by focusing on the intricate complexities found in images displaying diverse symptoms, scattered lesions, and complex backgrounds. To aid this endeavor, a substantial dataset of 220,592 images is assembled. The proposed method uses a reweighting strategy that targets both visual regions and loss. Initially, weights for segmented patches are calculated based on their discriminative potential obtained from cluster distributions. These weights are then seamlessly integrated into the training process, assigning them to individual patch-label pairs during weakly-supervised training, aiding in

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Telecommunications and Radio Engineering (English translation of Elektrosvez and Radiotekhnika)

Volume 83, Issue 2, 2024, Pages 37-48

### A COMPACT HONEYCOMB-STRUCTURED RECONFIGURABLE ANTENNA WITH COPLANAR WAVEGUIDE FEED FOR MULTIBAND WIRELESS APPLICATIONS(Article)

Subashini, V., Chitra, S. [ORCID](#)

<sup>1</sup>Department of Electronics and Communication Engineering, Sri Sairam Institute of Technology, West Tambaram, Tamil Nadu, Chennai, 600044, India  
<sup>2</sup>Department of Electronics and Communication Engineering, Rajalakshmi Engineering College, Rajalakshmi Nagar, Thandalem, Tamil Nadu, Chennai, 602115, India

**Abstract**

The design and implementation of reconfigurable antennas in wireless applications play a tremendous role in minimizing the hardware size of wireless devices. An antenna with the potential to vary its frequency of operation, radiation pattern, and polarization according to the requirement is known as a reconfigurable antenna. Here a novel honeycomb-structured frequency and pattern-reconfigurable monopole

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Gençoğlu, D.N.  
 Bibliometric analysis of reconfigurable antennas in radar applications: Trends, influential authors, and future directions  
 (2024) *Radar and RF Front End System Designs for Wireless Systems*  
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## Document details - LDS-LVAT: Lie Detection System-Layered Voice Technology

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Technological Advancement in Internet of Medical Things and Blockchain for Personalized Healthcare: Applications and Use Cases

1 January 2024, Pages 187-203

### LDS-LVAT: Lie Detection System-Layered Voice Technology (Book Chapter)

Venna, K., Meena, K., Rajalakshmi, D., Fathima, M., Thamarai Selvi, K. [ORCID](#)

<sup>1</sup>Department of Computer Science and Engineering, Sathyabama Institute of Science and Technology, Chennai, India  
<sup>2</sup>Department of Computer Science and Engineering, GITAM University, Bengaluru, India  
<sup>3</sup>Department of Computer Science and Engineering, Sri Sairam Institute of Technology, Chennai, India

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**Abstract**

When dealing with criminal cases, investigators find detecting lies and dishonesty to be a considerable issue. In comparison to normal human conduct, the process of identifying a liar has a higher proportion of importance in terms of external behavior and cognitive power of the brain. Mel-frequency cepstrum coefficients (MFCC) approach extracts distinctive features from the original electroencephalogram data and utilizes them in conjunction with the neural network (NN) methodology for training and evaluation. Existing lie detection systems rely on physiological and behavioral factors, resulting in limited effectiveness. However, the pursuit of a computational model for automating lie detection has not been extensively explored. Researchers have recently focused on training machine learning models, including sequential NNs, solely using acoustic data from speech to enhance the accuracy of lie detection. The MFCC, energy envelopes, and pitch contours are constructed using a balanced data set of deceptive and non-deceptive speech recordings taken from a two-person deception game. This model's highest accuracy

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- Convergence of IoT and Blockchain for Emerging Personalized Healthcare Systems: Challenges and Use Cases
- Role of Access Control Mechanism for Blockchain-Enabled IoT in Personalized Healthcare
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## Document details - Recent trends and practices of bio-functionalized carbon nanotubes in bioimaging and biosensing applications in biomedical sectors

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Carbon-Based Nanomaterials in Biosystems: Biophysical Interface of Lower Dimensions  
1 January 2024, Pages 361-392

### Recent trends and practices of bio-functionalized carbon nanotubes in bioimaging and biosensing applications in biomedical sectors (Book Chapter)

Prabakaran, L., Vedakumar, S.W., Jeevanan, A., Joacquin Vede Jancy, S.

<sup>1</sup>Faculty of Allied Health Sciences, Chettinad Hospital and Research Institute, Chettinad Academy of Research and Education, Tamil Nadu, Kalambakkam, India  
<sup>2</sup>Department of Computer and Communication Engineering, Sri Sai Ram Institute of Technology, Tamil Nadu, Chennai, India

**Abstract**  
Nanotechnology has led to various breakthroughs in the field of science and technology. One such inimitable innovation is the development of carbon nanotubes (CNTs), which hold remarkable mechanical, electrical, and optical properties suitable for biomedical applications. The structure of the CNTs can be modified or functionalized by conjugating organic or inorganic materials, and this has gained a lot of attention among researchers who are working in the field of cancer detection and therapy. The CNTs, especially one-dimensional semiconducting single-walled carbon nanotubes (SWCNTs), show fluorescence emission in the near-infrared spectral region and hold robust resonance Raman's scattering suitable for bioimaging and biosensing applications in biomedical sectors. When coupled with metal nanoparticles, CNTs serve as

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Synthesis, characterization, and applications of carbon nanomaterials from a nanobio-technological perspective  
Introduction  
Green carbon nanomaterials and their application in food, agriculture, and biomedicine  
Recent trends in the "bottom-up" and "top-down" techniques in the synthesis and fabrication of myriad carbonaceous nanomaterials  
Implications of caged molecular structure of buckminsterfullerenes in food sciences and industry applications  
Uncovering the unique attributes of 2D graphene-based nanomaterials in food

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## Document details - Multiple Level Inverter Scheme for Improved Power Quality of Renewable Energy Solar Panel

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International Journal of Intelligent Systems and Applications in Engineering  
Volume 12, Issue 1x, 2024, Pages 98-105

### Multiple Level Inverter Scheme for Improved Power Quality of Renewable Energy Solar Panel (Article)

Sivarajewari, S., Hublikar, S.N., Kumar, V., Shobana, D., Deepak, A., Oliva, M.

<sup>1</sup>Department of Electrical and Electronics Engineering, Sri Sairam Institute of Technology, Tamilnadu, West Tambaram, Chennai, India  
<sup>2</sup>Sanjay Bhokare Group of Institutes, Miraj, India  
<sup>3</sup>Department of Electrical Engineering, GLA University, Mathura, India

**Abstract**  
Using a layered voltage source inverter rather than a normal one is advantageous in a number of ways and should be considered. By manipulating the voltages of the AC output ends, small quantities of harmonic distortion can be added into spiral staircase waveforms. The thing that's needed right now is a filter that takes up less space in storage. The optimistic outlook that can be attributed to photovoltaic systems' extensive use can be credited to the widespread use of solar systems. Over 635 gigawatts have been added to the global installed capacity, which is sufficient to meet approximately 2% of the world's demand for electricity. In the realm of power technology, there will be a growing demand

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Alkhefaji, M.A., Davala, K., Edwin Prabakaran, P.B.  
A PV-Powered Single Phase Seven-Level Inverter's Photocurrent and Injected Power  
(2024) E3S Web of Conferences  
Battisti, E.A., Ventura, C., Rizzo, S.A.  
Circuit simulation-based comparison of power electronics devices in a five-level converter for UAV applications  
(2024) AIMS Energy  
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EAI Endorsed Transactions on Internet of Things

Volume 10, 2024

### An IoT Integrated Smart Prediction of Wild Animal Intrusion in Residential Areas Using Hybrid Deep Learning with Computer Vision(Article)(Open Access)

Senthil, G.A., Prabha, R., Ashwarya, N., Ashe, R.M., Prabu, S.

\*Department of Information Technology, Agri College of Technology, Chennai, India  
 \*Department of Electronics and Communication Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
 \*Department of Computing Technology, School of Computing, SRM Institute of Science and Technology, Kattankulathur, Chennai, India

**Abstract**

**INTRODUCTION:** The conversion of forests into human lands causes the intrusion of wild animals into the residential area. There is a necessity to prevent the intrusion of such wild animals which causes damage to properties and harm or kill humans. Human population growth leads to an increase in the exploitation of forest areas and related resources for residential and other settlement purposes. There is a need for a system to detect the entry of such animals into habitats. **OBJECTIVES:** This paper proposes that conversion of forests into human lands causes the intrusion of wild animals into the residential area. **METHODS:** Deep learning technology combined with Internet of Things (IoT) devices can be deployed in the process of restricting the entry of wild animals into residential areas. The proposed system uses deep learning techniques with the use of various algorithms like DenseNet 201, ResNet50 and You Only Look Once (YOLO). These deep learning algorithms predict wild animals through image classification. This is done using IoT devices placed in such areas. The role of IoT devices is to transmit the computer vision images to the deep learning module, receive the output, and alert the residents of the area. **RESULTS:** The main results are implementation prediction of animals for image processing. Datasets used for the prediction and classification include the use of cloud module. It stores the dataset for the prediction process and transfers it whenever needed. As the proposed system is a hybrid model that uses more than one algorithm, the accuracy obtained from the prediction for DenseNet 201, ResNet50 and You Only Look Once (YOLO) algorithm is 82%, 92%, and 98%. **CONCLUSION:** The prediction of those animals is done by a deep learning model which comprises three algorithms are DenseNet 201, ResNet50 and YOLOv3. Comparing the accuracy of an algorithm with higher accuracy is considered efficient and accurate. © 2024 Senthil G.A. et al., licensed to EAI.

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Goerthik, S., Senthil, G.A., Illakya, G.  
 Future Navigation Demand Trends: Accurate Ride Request Forecasting Optimizations Using Machine Learning

(2024) 2024 3rd International Conference on Smart Technologies and Systems for Next Generation Computing, ICSTSN 2024

Senthil, G.A., Geerthik, S., Thiraganani, G.  
 An Automated Mood Analysis of Crying Infants Through Sound Recognition Using Hybrid Deep Learning

(2024) 2024 3rd International Conference on Smart Technologies and Systems for Next Generation Computing, ICSTSN 2024

Senthil, G.A., Lokesh Priya, R.V., Geerthik, S.  
 Safe Road AI: Real-Time Smart Accident Detection for Multi-Angle Crash Videos using Deep Learning Techniques and Computer Vision

(2024) Proceedings of the 3rd International Conference on Applied Artificial Intelligence and Computing, ICAAIC 2024

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## Document details - Enabling Metaheuristics with Deep Learning based Resource Allocation in Unmanned Aerial Vehicles Wireless Networks

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Journal of Intelligent Systems and Internet of Things

Volume 11, Issue 2, 2024, Pages 85-96

### Enabling Metaheuristics with Deep Learning based Resource Allocation in Unmanned Aerial Vehicles Wireless Networks(Article)

Chella, R.R., Josephine, J.A., Priya, N., Anurotha, C., Kavitha, R.

\*Department of CSE, Jain (Deemed-to-be-University), Global Campus, Karnataka, Bangalore, 562112, India  
 \*Department of CSE (Cyber Security), Jain (Deemed-to-be-University), Global Campus, Karnataka, Bangalore, 562112, India  
 \*Department of CSE, Sri Sai ram Institute of Technology, TamilNadu, India

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**Abstract**

Unmanned aerial vehicle (UAV) network offers a variety of applications in public safety, disaster management, advertising and broadcasting, overland situation, etc. Due to the dynamic characteristics of MU, it is challenging to provide robust transmission services to mobile users (MU). Resource allocation (RA), including sub-channel, serving user, and transmit power, is a crucial problem; also, it is critical to enhance the coverage and energy efficiency of UAV-enabled communication protocol. Furthermore, system resources are limited (for example, spectrum, and transmission power) and UAV transmission coverage and on-board energy are limited. In order to meet the QoS of any user with limited UAV energy and limited resource system, we jointly enhance UAV trajectory, user communication scheduling, and bandwidth allocation and transmit

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Scientific Reports  
 Volume 13, Issue 1, December 2023, Article number 18760

**Seasonal variations in the phenolic profile, antioxidant activity, and mineral content of south Indian black tea (*Camellia sinensis* (L.) O. Kuntze)(Article)(Open Access)**

Govindasamy, K., Sugumar, B.A.S., Randan, N.M., Nagaprasad, N., Ramaswamy, K.

<sup>1</sup>Department of Chemistry, PA, College of Engineering, Palolchi, Tamilnadu, Coimbatore, 642 002, India  
<sup>2</sup>Department of Chemistry, Sri Sai Ram Institute of Technology, West Tambaram, Tamilnadu, Chennai, 600 044, India  
<sup>3</sup>Department of Mechanical Engineering, PA, College of Engineering and Technology, Palolchi, Coimbatore, 642002, India

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**Abstract**

In the Anamalais region of south India, crop shoots from the UPASI-3, UPASI-9, UPASI-11, Assam seedlings, and TR1-2043 cultivars were examined for seasonal variations in total phenolics, antioxidant activity, and minerals during four harvest seasons: summer (January to March), monsoon (April and May), monsoon (June to September), and winter (October to December) of two consecutive years. The total phenolics of all

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Hopfstock, R., Panyasri, P.A.N., Kiene, M.  
 Characterization and Quantification of Anthocyanins of the Pigmented Tea Cultivar TR1-2043 (*Camellia sinensis* L.) from Sri Lanka  
 (2024) Separations  
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Frontiers in Mechanical Engineering  
 Volume 10, 2024, Article number 1325938

**Enhancing efficiency in photo chemical machining: a multivariate decision-making approach(Article)(Open Access)**

Sajkato, G., Ghadei, R.K., Cep, R., Shanmugasunder, G., Chohan, J.S., Kolia, K.

<sup>1</sup>Department of Mechanical Engineering, Sikkim Manipal Institute of Technology, Sikkim Manipal University, Gangtok, India  
<sup>2</sup>Department of Mechanical and Industrial Engineering, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, India  
<sup>3</sup>Department of Machining, Assembly and Engineering Metrology, Faculty of Mechanical Engineering, VSB-Technical University of Ostrava, Ostrava, Czech Republic

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**Abstract**

Non-Traditional Machining (NTM) outperforms traditional processes by offering superior geometric and dimensional accuracy, along with a better surface finish. Photo Chemical Machining (PCM) represents one such NTM process, using chemical etching for material removal. PCM finds substantial application in the creation of microchannels in pharmaceutical, chemical and energy industries. Several input parameters—such as etchant concentration, etching time and etchant temperature—profoundly influence the machining's quality and efficiency. Therefore, the

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Van Duij, T.  
 OPTIMAL SELECTION FOR MACHINING PROCESSES USING THE PSL-R-PIV METHOD  
 (2024) Applied Engineering Letters  
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Journal of Environmental Protection and Ecology  
Volume 25, Issue 1, 2024, Pages 257-267

**ENVIRONMENTAL MONITORING USING WSNs FOR SUSTAINABLE PEST AND DISEASE CONTROL IN CORN PRODUCTION**(Article)

Prakash, A.A., Thulazimen, T., Pawar, S.R., Maheswari, E., Pradeep, J., Patonkar, N.S., Rajaram, A.

\*Department of CSE, Sathyabama Institute of Science and Technology, Chennai, India  
 \*Department of Mathematics, Bharati Annam Institute of Technology, Sathyamangalam, India  
 \*Mechanical Engineering Department, Bharati Vidyaapeeth College of Engineering, Navi Mumbai, India

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**Abstract**

Pest and disease infections pose significant challenges to corn production, affecting crop yield and quality. Addressing this issue demands innovative solutions to enable sustainable agriculture practices. This research investigates the application of Wireless Sensor Networks (WSNs) for environmental monitoring to facilitate proactive pest and disease control in corn cultivation. The problem statement highlights the lack of real-time data for proactive pest and disease management, leading to yield losses and environmental concerns. The proposed system integrates WSN technology into corn fields, deploying sensors to monitor crucial environmental parameters such as temperature, humidity, and soil

**Cited by 10 documents**

Shreekrishna, K., Yonnamadri, V.R., Sundari, R.  
SMART PESTMENT ENGINEERING INTEGRATION OF IOT AND SENSOR TECHNOLOGIES FOR ENHANCED PERFORMANCE MONITORING AND MAINTENANCE.  
(2024) *Journal of Environmental Protection and Ecology*

Mahna, S., Deema, J.S., Swepeika, K.  
EXPLORE THE POTENTIAL OF PRECISION AGRICULTURE TECHNOLOGIES TO ENHANCE RESOURCE USE EFFICIENCY AND SUSTAINABILITY IN SMALLHOLDER FARMING SYSTEMS  
(2024) *Journal of Environmental Protection and Ecology*

Shrivani S. Chinnamraju, M. Thakkar N.

Document details - Effect of deposition temperature on the tribo-mechanical properties of nitrogen doped DLC thin film

Frontiers in Mechanical Engineering  
Volume 10, 2024, Article number 1365555

**Effect of deposition temperature on the tribo-mechanical properties of nitrogen doped DLC thin film**(Article)(Open Access)

Shanmugasundar, G., Vanitha, M., Logesh, K., Cepova, L., Elangovan, M.

\*Department of Mechanical Engineering, Sri Sri Ram Institute of Technology, Chennai, India  
 \*Department of Chemistry, Sri Sreenivasa Engineering College, Chennai, India  
 \*Department of Mechanical Engineering, Vei Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Avadi, India

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**Abstract**

The tribomechanical characteristics of diamond-like carbon (DLC) coatings are notably superior to other hard coatings, making them highly desirable for industrial applications. This study focuses on the synthesis of nitrogen-doped DLC (N-DLC) films through chemical vapor deposition (CVD) methods, with an emphasis on varying the deposition temperature. Comprehensive characterization techniques such as atomic force microscopy (AFM), scanning electron microscopy (SEM), and nanoindentation were employed to investigate the morphological and mechanical attributes of these coatings. The thickness of the films, measured using a Dektak profilometer, demonstrated an increase from 1.9 to 2.8 μm as

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Zhang, J., Mei, S., Chen, Y.  
Bias voltage-induced structural change in PECVD-deposited diamond-like carbon coatings for optimizing the tribological performance  
(2024) *Surface and Coatings Technology*

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Internet of Medical Things in Smart Healthcare: Post-COVID-19 Pandemic Scenario  
 1 December 2023, Pages 207-224

**IoT-based caring system for aged people in a post-COVID scenario (Book Chapter)**

Parimala, A., Anand, J.

\*Department of CSE, Sri Sri Ram Institute of Technology, Chennai, Tamil Nadu, India  
 \*Department of ECE, KGS College of Technology, Karaikkal, Chennai, Tamil Nadu, India

**Abstract**

Numerous aged people are living unaccompanied in their households. If the aged people tumble, it may be problematic for them to demand for help at this current scenario because of the Covid-19 pandemic situation. The foremost objective of this chapter is to design an android-based tumble detection device at a reasonable cost for the aged people. The technique describes the layout of the android-based totally fall detection sensor device with a pulse value tracking unit. The device is capable of well-known a falling incident to the touch individual such that the incident may be sent to the ambulance branch to the soonest possible, and to offer essential scientific remedies for the injured aged in a quick span of time. The layout and implementation integrate both hardware and software program that paintings synchronously in detecting and reporting a fall at domestic and still have on brought normal monitoring device. So each 10 mins as soon as their region could be shared to the

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 Volume 12836, 2024, Article number 1283601

Optical Biopsy XXII: Toward Real-Time Spectroscopic Imaging and Diagnosis 2024, San Francisco, United States, 19 January 2024 through 31 January 2024, Code 199694

**Raman and Fluorescence spectroscopic characterization of Pteridines in the blood of normal subjects and oral cancer patients (Conference Paper)**

Brinda, E., Rajasekaran, R., Bhojanicharan, G., Manjya, B.S., Aruna, P., Ganesan, S.

\*Department of Physics, Sri Sairam Engineering College, Chennai, 600 044, India  
 \*Department of Physics, Sri Sairam Institute of Technology, Chennai, 600 054, India  
 \*Department of Medical Physics, Anno University, Chennai, 600 023, India

View additional affiliations

**Abstract**

Pteridines and its derivatives are considered as important cofactors participating in cellular metabolism. Studies reported that, the distribution of pteridines and its derivatives may change when monocytes and macrophages are activated under Interferon- $\gamma$  stimulus by cancer. Also, there is a significant variation in the concentration and conformation of pteridines under different pathological conditions. It has been reported that during the transformation of normal cells into neoplasm, the metabolic end products of the cancer cells are released into the blood, thereby

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 2nd IEEE International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics, ICIITEE 2024, BNM Institute of Technology Bengaluru, India, 24 January 2024 through 25 January 2024; Category number: ICIITEE 2024; Code: 198276

Exploring Convolution Neural Networks for Image Classification in Medical Imaging (Conference Paper)

Vishwa Priya, V., Chettu, R., Sivazankari, K., Pital, D.T., Ronika Sai, B., Suganthi, D., R.

<sup>1</sup>Yas Institute Science, Technology, and Advanced Studies, Department of Cs, Tamilnadu, Chennai, India  
<sup>2</sup>Ace Engineering College, India  
<sup>3</sup>Sri Sai Ram Institute of Technology, Department of Ece, Tamilnadu, Chennai, India

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Abstract  
 Modern healthcare relies on medical imaging to diagnose and cure diseases. Convolution Neural Networks (CNNs) have excelled at image categorization, and their use in medical imaging could change illness diagnosis. This study examines CNN's medical picture categorization performance. This study used X-ray, CT scans, MRI, and histopathology slides. Traditional CNNs, transfer learning models, and bespoke

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Machine Intelligence in Mechanical Engineering  
 1 January 2024, Pages viii-xi

Preface  
 (Editorial)  
 (Open Access)

Palani Kumar, K., Natarajan, E., Ramesh, S., Davim, J.P.

<sup>1</sup>Department of Mechanical Engineering, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, India  
<sup>2</sup>Department of Mechanical Engineering, Engineering, Technology and Built Environment, UCSI University, Kuala Lumpur, Malaysia  
<sup>3</sup>Department of Mechanical Engineering, Jeevaiah College of Engineering, Tamil Nadu, Chennai, India

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- A smart production line management system using face recognition and augmented reality
- Preface
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- Minimizing intercellular movement of parts and maximizing the utilization of machines using the correlation index-based clustering algorithm
- Application of augmented reality and virtual reality technologies for maintenance and repair of automobile and mechanical equipment
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Environment Protection Engineering  
Volume 50, Issue 1, 2024, Pages 5-25

DCSNN OPTIMIZED with HYBRID BORDER COLLIE OPTIMIZATION and ARCHIMEDES OPTIMIZATION ALGORITHMS for SOLID WASTE PREDICTION in CHENNAI(Article)(Open Access)

Vidya, S., Janani, E.S.V., Sreedevi, B. &  
 \*Department of Computer Science Engineering, Sri Sainam Institute of Technology, Tamil Nadu, Chennai, India  
 \*Department of Computer Science and Engineering, Anna University Regional Campus, Tamil Nadu, Madurai, India

Abstract  
 The rapid growth of smart cities and industry causes an increase in waste production. The amount of municipal solid waste (MSW) increases by several factors, including population growth, economic status, and consumption trends. The inadequacy of basic trash data is a major issue for managing MSW. Numerous existing models based on solid waste prediction have been presented so far, but none of them predict solid waste accurately and also it consumes more time. To address these concerns, a deep convolutional spiking neural network for solid waste prediction (DCSNN-SWP) is proposed in this paper. Here, the real-time solid waste prediction data are gathered from the quantity of municipal corporation

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Energy Sources, Part A: Recovery, Utilization and Environmental Effects  
Volume 46, Issue 1, 2024, Pages 6882-6887

Assessing the impact of sargassum algae biodiesel blends on energy conversion in a modified single-cylinder diesel engine with a silica-incorporated diamond-like coated piston(Article)

Jayarajan, K., Veeraraghavan, S., Sundaram, M., Voruvil, E.G. &  
 \*Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
 \*Department of Automobile Engineering, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai, India  
 \*Department of Mechanical Engineering, Faculty of Engineering and Natural Sciences, Istinye University, Istanbul, Turkey

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Abstract  
 As coal and oil reserves deplete, the world is shifting to alternative fuel and renewable energy. Researchers are exploring a cleaner alternative to fossil fuels for powering automobiles. In this investigation, biodiesel was synthesized from brown marine algae (Sargassum algae) using transesterification reaction. Silica-incorporated diamond-like carbon (DLC) was done on the end of piston by using the chemical vapor

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Saravanan, G., Thiyaagarajan, P.  
 Performance, combustion and emission parameters of Scenedesmus obliquus methyl ester in single-cylinder CI engine: an experimental study  
 (2024) Journal of Thermal Analysis and Calorimetry

Rajesh, K., Bibin, C., Saundararajan, G.  
 Investigating the impact of alumina nanoparticles in coconut oil distillate biodiesel to lessen emissions in direct injection diesel engine  
 (2024) Scientific Reports

Ramalingam, S., Munuswamy, D.B., Devarajan, Y.

Document details - Detection and Categorization of Breast Cancer Using Machine Learning

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Proceedings of the 2024 10th International Conference on Communication and Signal Processing, ICCSP 2024  
 2024, Pages 260-264

10th International Conference on Communication and Signal Processing, ICCSP 2024; Melmaruvathur, India; 12 April 2024 through 14 April 2024; Category numberCF2024ISM-ART; Code 200090

**Detection and Categorization of Breast Cancer Using Machine Learning**(Conference Paper)

Parvatham, N., Soye Sudharana, P.A., Lavanya, E., Senthilhan, A.

Sri Sairam Institute of Technology, Electronics and Communication Engineering, Chennai, India

**Abstract**

Cancer that originates in the breast tissue is known as breast cancer. A breast lump, breast firm changes, skin dimpling, fluid flowing from the nipple, a newly inverted nipple, or a red or scaly patch of skin can all be indicators of breast cancer. Yellow skin, shortness of breath, enlarged lymph nodes, and bone pain are possible symptoms in those whose disease has progressed far. The initial goal is to examine the different deep learning models for image classification of breast cancer histology. According to research, the majority of skilled medical professionals can identify cancer with 79% accuracy, however machine learning approaches can obtain a 91% right diagnosis. Delaying the growth of a tumor or breast cancer has long term consequences and may even be fatal. Therefore, it is important to detect the tumor as soon as possible in order to stop its growth and stop it from spreading to other tissues. It is typically recommended to undergo a mammography procedure in order to detect and diagnose breast cancer early. © 2024 IEEE.

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Document details - Investigation of mechanical properties of silver-doped diamond-like carbon coating by varying deposition temperature

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Frontiers in Mechanical Engineering  
 Volume 10, 2024, Article number 135496

**Investigation of mechanical properties of silver-doped diamond-like carbon coating by varying deposition temperature**(Article)(Open Access)

Ghodoi, R.K., Shanmugasundar, G., Venkta, M., Cep, R., Das, S., Swain, B.R.

<sup>1</sup>Department of Mechanical and Industrial Engineering, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, India  
<sup>2</sup>Department of Mechanical Engineering, Sri Sri Ram Institute of Technology, Chennai, India  
<sup>3</sup>Department of Chemistry, Sri Sairam Engineering College, Chennai, India

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**Abstract**

The present work shows the influence of deposition temperatures on the mechanical properties of silver (Ag)-doped diamond-like carbon (DLC) coating synthesized by the thermal chemical vapor deposition (CVD) technique. The deposited film showed excellent mechanical and tribological behavior with respect to the lower deposition temperatures. From the EDS analysis, it was confirmed that the percentage of Ag decreased from 9.8% to 8.4% as the deposition temperature increased. The nanoindentation tests at different loads were extensively carried out to observe the mechanical properties of the coating with respect to various deposition temperatures. The coating hardness (H) and Young's modulus (E) decreased with the rise in furnace temperature, and the H<sub>max</sub> and E<sub>max</sub> were observed as 29.71 and 251.19 GPa, respectively, for the Ag-DLC coating grown at 800°C at a load of 20 mN. In comparison to other Ag-DLC thin films made using different deposition techniques, the residual stress (σ) was significantly reduced, reaching 0.45 GPa, which is extremely low. Copyright © 2024 Ghodoi, Shanmugasundar, Venkta, Cep, Das and Swain.

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Baethong, S., Herrichon, V., Pimsoot, A.  
 Electrodeposition of Ag-doped diamond-like carbon films on stainless steel for supercapacitor applications  
 (2025) *Journal of Alloys and Compounds*

Zhaocheng, H., Khokhar, H., Yanaga, E.  
 Effect of Molybdenum Concentration and Deposition Temperature on the Structure and Tribological Properties of the Diamond-like Carbon Films  
 (2024) *Cryetal*

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High-Performance Intelligent System for Real-Time Medical Image Using Deep Learning and Augmented Reality(Conference Paper)

Senthil G.A., Prabha, R., Rajesh Kanna, R., Umadevi Venket, G., Deepa, R.

\*Department of Information Technology, Agri College of Technology, Chennai, India  
\*Department of Electronics and Communication Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
\*Department of Computer Science and Engineering, Agri College of Technology, Chennai, India

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Abstract

Evolving new diseases demand the need for technology to identify the disease in an effective way. Medical imaging in the field of disease identification helps to identify the disease by scanning the human parts, thereby preventing the increased rate of deaths. Deep learning algorithms make it easier to identify and analyze disease efficiently through medical imaging. The high performance of these models is needed

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Gwerthik, S., Senthil, G.A., Jayakumar, D.  
Deepfake Video Prediction Using Attention-Based CNN and Mel-Frequency Cepstral Coefficients  
(2024) 2024 3rd International Conference on Electrical, Electronics, Information and Communication Technologies, ICEEICT 2024

Gwerthik, S., Senthil, G.A., Oliyayo, K.J.  
A System and Method for Fraud Detection Using Transfer Learning and CNN  
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ARPN Journal of Engineering and Applied Sciences  
Volume 19, Issue 4, 2024, Pages 236-234

PREDICTING MENTAL DEPRESSION(Article)

Jambati, K., Mohan, S.B., Bhuvana, S., Achuthi, R., Pramkumar, M., Rajasekar, A.

\*Department of Computer Science, S.A. College of Arts & Science, Chennai, India  
\*Department of Electronics and Communication Engineering, S.A. Engineering College, Chennai, India  
\*Department of Computer Science and Engineering, Dr. MGR Educational and Research Institute, Chennai, India

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Abstract

In this study, a multi-level linear regression technique based on neural network tailored association is suggested to predict human mental depression. The suggested technique uses a neural network configured for association-based multiple linear regression to forecast the mental depression dataset. The spectrum of depression is predicted using a variety of statistical techniques, including both multiple linear regression and linear regression with neural network tuning. When predicting the severity of depression, tweaked algorithms perform less well. They have been fine-tuned for significant differences in the accuracy, timing, and speed of depression predictions. To address these difficulties, a multiple linear regression solution based on neural network tailored association is suggested. The Multiple linear regression using a neural network that has been tweaked for association yields high compared to other statistical approaches, accuracy prediction is roughly 91%. © 2006-2024 Asian Research Publishing Network (ARPN) All rights reserved.

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Volume 2742, 12 May 2022, Article number 040006
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**Design and finite element analysis of 6 DOF robotic arm for automatic pick and place application in industry 4.0(Conference Paper)**

Shanmugasundar, G., Muralikumar, R., Sathishkumar, L., Satharajon, N., Dharamidharan, M., Noorayanan, R.K., Mohalakshmi, R.

Department of Mechanical Engineering, Sri Sri Ram Institute of Technology, Chennai, India

**Abstract**

Robots are incorporated into the production systems to boost the automation of manufacturing operations as part of the Fourth Industrial Revolution. The 6 Degree of Freedom robotic arm is getting a lot of popularity in the manufacturing field because of its ability to do precise work and difficult tasks. The goal of our research work is to design a 6 DOF robotic arm and to do Finite Element Analysis on that robotic arm. The Internet of Things (IoT) concept was used for controlling the robotic arm through web or mobile application for doing the repetitive operations. The robotic arm having 6 degree of freedom along with the gripper was designed using the SOLIDWORKS software. The finite

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 Position Control of Electro-hydraulic Servo System Based on Repetitive Control Strategy

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Intelligent and Soft Computing Systems for Green Energy
3 May 2022, Pages 141-159

**Region-based convolutional neural networks for selective search (Book Chapter)**

Kavitha, R., Srinivasan, R., Subho, P., Kavitha, M.

\*Vai Tech Ranganujan Di. Sogunthala R and D Institute of Science and Technology, Chennai, Tamil Nadu, India  
 \*Sri Sri Ram Institute of Technology, Chennai, India

**Abstract**

In recent years, image stitching and selective search using neural networks has had an increasingly significant role in various fields, including moving pictures, astronomy and healthcare. Image recognition through selective search consists of complex algorithms, and several cumbersome calculations produce "scenes" which then merge together to form a real-life representation of the required area. This paper introduces a low-cost modeling method with user-friendly application that involves the concept of Image Stitching. It also discusses graphics rendering software with simulation of user movement in the scenario created on the computer. This study investigates a type of Harris picture stitching technique that is based on the OpenCV setup environment, in light of the immense scene and high-resolution image stitching challenges. To begin, the feature points are extracted using Harris corner detection. The feature points are then rough-matched using Normalized Cross Correlation, then the algorithm RANSAC is employed to eliminate incorrect matching. Second, to implement the image

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCFP23G27-ART; Code 198193

**Wireless Autonomous Drone Charging Hub: Revolutionizing Unmanned Aircraft Connectivity(Conference Paper)**

Dhanasekar, R., Vijayaraja, L., Premkumar, R., Pragasath, T.M., Yogeshwaran, M., Vijayavelam, V.  
<sup>\*</sup>Sri Sairam Institute of Technology, Department of Electrical and Electronics Engineering, Chennai, India  
<sup>\*</sup>Sri Sairam Engineering College, Department of Electronics and Instrumentation Engineering, Chennai, India

**Abstract**

The incredible development that the drone industry has experienced over the past few years has coincided with an increase in the quantity of research resources invested in drones. This use of unmanned aerial vehicles are severely restricted by the short battery lives of these vehicles, which is a challenge that has proven to be difficult to resolve. One potential solution to this problem is the construction of an independent drone charging facility. This study recommends a charging station that is both wireless and entirely autonomous. Furthermore, the station permits a UAV to make a rough landing on the landing strip, which is something that actually occurs quite frequently with real-world systems. If someone really uses the charging station that was suggested, it is possible that it will no longer be necessary to charge the batteries of quadcopter.

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**QR Code-Enhanced Drug Identification and Access(Conference Paper)**

Devi, R.L., Sangeetha, K., Rajeev, A., Adhwin, R., Vikash, V., Poshanmaganakumar, A.  
<sup>\*</sup>Sri Sri Ram Institute of Technology, Dept of Electronics and Communication Engineering, Chennai, India  
<sup>\*</sup>Sri Sri Ram Institute of Technology, Dept of Mechanical Engineering, Chennai, India

**Abstract**

In our daily lives, we rely on various medications, including tablets, syrups, and anti-infective skin creams, to maintain our health. These pharmaceuticals come with essential information about their expiration dates, usage instructions, and drug combinations, often presented in a small font on packaging or inside blister strips. Unfortunately, this valuable information is often overlooked, leading to medication errors. To address this issue, we introduce the concept of QR Code-Tablet Identifier, a revolutionary approach to drug identification and access. QR codes, embedded with comprehensive drug information, such as manufacturing data, expiry date, and usage guidelines, provide a user-friendly and efficient solution. By simply scanning the QR code using a smartphone or tablet, users can access vital medication details without an internet connection, enhancing patient safety and medication management. © 2023 IEEE.

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International Journal of System Assurance Engineering and Management  
Volume 14, December 2023, Pages 918-923

Investigation on the impact of the supplier, customer, and organization collaboration factors on the performance of new product development(Article)(Open Access)

Murali, S., Bélasubramanian, M., Choudery, M.V.,

\*Sri Sai Ram Institute of Technology, Chennai, 600044, India  
\*BMK College of Engineering and Technology, Thiruvallur, 602206, India

**Abstract**  
The present worldwide market powers the business associations to build up their item as novel and demanding ones in the market. To guarantee success in consumer satisfaction and higher profit, organizations embrace different methodologies in the new product development. Contribution from the Supply chain partners and customers may enhance the process and development of new product as the external knowledge sources besides internal knowledge sources. The collaboration of suppliers, customers, and organizations (S, C, O) in the new product development process gives innovative products to satisfy the needs of the end-users ultimately. This investigation focuses on developing a

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Realization of waste polymeric materials for 3D printing applications  
(2024) From Waste to Wealth  
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Investigating the mediating impact of supplier quality integration in pharmaceutical supply chains  
(2024) International Journal of Quality and Reliability Management  
Nurjebeva, D., Soyuro, Q., Gulmira, P.  
Artificial Intelligence Software Architecture in the Field of Cardiology and Application in the Cardiac Visual

Document details - Design of Converter for Improvement of LVRT Capability in Grid Integrated PV System

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCF22G27-ART; Code 29893

Design of Converter for Improvement of LVRT Capability in Grid Integrated PV System(Conference Paper)

Ezhilmani, G., Kumar, R.S.  
Sri Sairam Institute of Technology, Department of Eee, Chennai, India

**Abstract**  
Enhancing a multimode inverter control method for improving the low-voltage ride-through (LVRT) capacity in grid-connected solar PV systems. The strategy aims to address the challenges associated with grid disturbances and ensure stable the PV system's performance. The proposed approach includes multiple operating modes for the inverter, allowing seamless transition between grid-connected and standalone modes during grid faults. The control strategy incorporates a dynamic voltage regulation scheme to maintain voltage stability and prevent system instability during LVRT events. Additionally, advanced control techniques, such as proportional-integral resonant (PIR) control and hysteresis control, are employed to achieve precise current and voltage regulation. The proposed strategy offers improved fault ride-through capability and grid synchronization performance, enabling uninterrupted power supply and minimizing the effect of disturbances in the electricity network on

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 2023 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems, ICISES 2023; Chennai; India: 14 December 2023 through 15 December 2023; Category numberICP25AF4; ART1; Code 398245

**A Smart Blood Donor Locator and Component Matching System for Rapid Disaster Response(Conference Paper)**

Thirunavukkarasu, J., Subinosh, K.J., Dharshan, R., Boobesh, S.

Sri Sai Ram Institute of Technology, Computer Science and Engineering, Chennai, India

**Abstract**

The Crucial part of life is surviving without any Health dangerous incidents but we cannot negotiate completely. Every human has shortage of blood during serious issues such as organ transplant, Bleeding disorder, medical conditions, road accidents, etc. Which can be cured by a blood donation. So, Blood donations are noble but blood transfusion is mostly for cancer treatment, Anemia and blood infections, etc. In order to help people to find a suitable blood that is rich in particular component we use cloud computing to find blood donors for blood transfusion. The approach involves building a cloud-based application that connects blood donors with patients in need of blood transfusions. Donor information

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Thirunavukkarasu, J., Chinnaiyary, A.  
 Enhancing the precision of prediction in heart disease diagnosis by utilizing machine learning  
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Kavinilava, A., Revathy, R., Parthiban, M.  
 Integrated Machine Learning for Accurate Detection of Heart Stroke Diseases  
 (2024) Proceedings - 3rd International Conference on Advances in Computing, Communication and Applied Informatics, ACCAI 2024

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Document details - Investigating the influence of dimensionality reduction on force estimation in robotic-assisted surgery using recurrent and convolutional networks

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Engineering Applications of Artificial Intelligence  
 Volume 126, November 2023; Article number 107045

**Investigating the influence of dimensionality reduction on force estimation in robotic-assisted surgery using recurrent and convolutional networks(Article)**

Sabique, P.V., Paraspathy, G., Romachandran, S., Shomugusundar, G.

<sup>1</sup>Advanced Robotics Lab, Department of Production Technology, Madras Institute of Technology, Anna University, Tamil Nadu, India  
<sup>2</sup>Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Tamil Nadu, Chennai, India

**Abstract**

Large data computing is a research problem and a major challenge in order to successfully mine, process, and evaluate massive datasets, as they represent a useful source of knowledge across multiple and intersecting domains. This paper explores the impact of Dimensionality Reduction (DR) on estimating the force in robotic-assisted surgery using recurrent and recurrent convolutional neural networks. This work collects an extensive dataset from three ex vivo porcine samples and one ex vivo artificial skin, as well as from various sensors, surgical tools, and manipulators, to research the impact of dimensionality reduction. These neural networks were considered to analyze and validate the results

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 High-dimensional multi-objective optimization of coupled cross-laminated timber walls building using deep learning  
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 Predictive modelling of residual stress in turning of hard materials using radial basis function network enhanced with principal component analysis  
 (2024) Engineering Science and Technology, an International Journal

Document details - Improving accuracy of medical data handling and processing using DCAF for IoT-based healthcare scenarios

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Biomedical Signal Processing and Control  
Volume 86, September 2023, Article number 105294

**Improving accuracy of medical data handling and processing using DCAF for IoT-based healthcare scenarios(Article)**

Petheraj, M.S., Burhenadde, M.A., Brindha Devi, V.

<sup>1</sup>Faculty of Information & Communication Technology, Universiti Teknikal Malaysia Melaka, Durian Tunggal, Melaka, Malaysia  
<sup>2</sup>Professor & Head / IT, Sri Sai Ram Institute of Technology, West Tambaram, Chennai, 600044, India

**Abstract**  
The Internet of Things (IoT), uses communication technologies and intelligent computing to improve data analysis and computation accuracy, which is essential to the healthcare industry. The sensitivity and requirement for precision in managing and processing medical data make it a difficult task for diagnosing patients. To handle medical data in a healthcare scenario based on the IoT, a Data Classification and Analysis Framework (DCAF) is proposed in this research. The proposed framework seeks to improve the precision and dependability of handling and processing medical data, which are essential components of biomedical signal processing. By reducing errors and accelerating the processing of medical data, the framework can help in improving the accuracy of medical diagnosis and therapy, which is a key objective of biomedical signal processing and control. The goal of this framework is to increase the reliability of message delivery by concentrating on data classification and

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Smart Medical Rescue via Efficient Vehicle Road Cooperation: AIoT Framework

Document details - Evaluation of the Descriptive Data Analysis and Statistical Analysis of Vitiligo Among the Patients Attending Opd and Ipd in Gsmc, Palayamkottai.

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**Evaluation of the Descriptive Data Analysis and Statistical Analysis of Vitiligo Among the Patients Attending Opd and Ipd in Gsmc, Palayamkottai.(Conference Paper)**

Latha, A., Nandhini, E., Rajas, D., Hazel, S.S., Jashu, S.D., Mathukumar, S.

<sup>1</sup>Sri Sairem Sidha Medical College and Research Centre, Chennai, 64, India  
<sup>2</sup>Sri Sairem Institute of Technology, Chennai, 64, India  
<sup>3</sup>Thiyagarajar College of Engineering, Madurai, India

**Abstract**  
Skin disorders can have different symptoms and levels of severity some have occupational or psychological causes, some may be inherited, and it

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Ren, X., Su, Z., Jheng, W.  
Association between Timbre Perception Features and Fine-Grained Emotions in Film and Television Music

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**Delay Minimization using Cooperative Localization to Avoid Multiple Vehicle Collision in Vehicular Adhoc Networks**(Conference Paper)

Kalitt, V., Bhargavi, Y.S., Nirmaladevi, G., Jayakumar, T., Srinhar, V.

\*Sathyabama Institute of Science and Technology, Department of ECE, Chennai, India  
\*M.K.K. Engineering College, Department of CSE, Chennai, India  
\*Sri Sairam Institute of Technology, Department of CSE, Chennai, India

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**Abstract**

Vehicular Ad Hoc Networks (VANETs) are currently evolved in an effective manner and it occupies huge number of applications in intelligent transmission system. In general, vehicles in this technology consist of certain characteristics like high speed with random mobility and unpredictable sociological choices which cause high collision and delay among the vehicles at the time of data transmission. In order to attend

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Materials Today Communications  
Volume 35, June 2023, Article number 109271

**Experimental interrogations on morphologies and mechanical delineation of silicon nitride fortified Mg-Al-Zn alloy composites**(Article)

Dhinkarraj, C.K., Senthilkumar, N., Palani Kumar, K., Deepnaraj, B.

\*Adhiparasakthi Engineering College, Tamil Nadu, Melmaruvathur, 603319, India  
\*Sowetha School of Engineering, Sowetha Institute of Medical and Technical Sciences, Tamil Nadu, Chennai, 602105, India  
\*Sri Sai Ram Institute of Technology, Tamil Nadu, Chennai, 600944, India

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**Abstract**

The smart material used in aerospace and automotive industries has to withstand high load with minimum structural weight. Nowadays, in search of new lightweight materials for the industrial application, magnesium is rapidly replacing aluminium-based alloys. In this research, magnesium (AZ31) matrix composite reinforced with ceramic silicon nitride (Si<sub>3</sub>N<sub>4</sub>) particle is fabricated by vacuum stir casting. The proportion of strengthening particle was assorted to a maximum of 10 % in steps of 2 % variation in weight. Microstructural analysis carried out through optical microscope reveals the occurrence and near-uniform spread of Si<sub>3</sub>N<sub>4</sub>. The mechanical properties for various weight proportions are

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Document details - Evaluation of the Descriptive Data Analysis and Statistical Analysis of Vitiligo Among the Patients Attending Opd and Ipd in Gsmc, Palayamkottai.

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**Evaluation of the Descriptive Data Analysis and Statistical Analysis of Vitiligo Among the Patients Attending Opd and Ipd in Gsmc, Palayamkottai.(Conference Paper)**

Latha, A., Nandhini, E., Rejoo, D., Hazel, S.S.J., Jishnu, S.D.J., Mathukumari, S.

<sup>1</sup>Sri Saireem Siddha Medical College and Research Centre, Chennai, 44, India  
<sup>2</sup>Sri Saireem Institute of Technology, Chennai, 44, India  
<sup>3</sup>Thiagarajar College of Engineering, Madurai, India

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**Abstract**

Skin disorders can have different symptoms and levels of severity some have occurred or of psychological causes, some may be inherited, and it

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Ren, X., Su, Z., Jheng, W.

Association between Timbral Perception Features and Fine-Grained Emotions in Film and Television Music

(2024) Proceedings - 2024 International Conference on Culture-Oriented Science and Technology, CAST 2024

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Document details - Improved Smart Healthcare System of Cloud-Based IoT Framework for the Prediction of Heart Disease

Information Technology and Control

Volume 52, Issue 2, 26 June 2023, Pages 529-540

**Improved Smart Healthcare System of Cloud-Based IoT Framework for the Prediction of Heart Disease(Article)(Open Access)**

Mary Sunderarajan, S.C., Bharathi, G.P., Loganathan, U., Vidyal, S.

<sup>1</sup>Department of Information Technology, Panimalar Engineering College (Autonomous), Poonamallee, Tamil Nadu, Chennai, India  
<sup>2</sup>Department of Computer and Communication Engineering, Sri Sai Ram Institute of Technology, West Tambaram, Tamil Nadu, Chennai, India  
<sup>3</sup>Department of Electrical and Electronics Engineering, RMK College of Engineering and Technology, R. S. M Nagar, Pudukottai, Tamil Nadu, Chennai, India

View additional affiliations

**Abstract**

Smart healthcare systems in the cloud-IoT framework are designed for the prediction of heart disease. This smart diagnosis improves the patient's health status and minimizes the death rate. Early prediction of heart disease may reduce the risk of patient illness and monitoring in real-time to avoid the risk. The view of existing algorithms is inaccurate in early prediction which took a lot of time for the prediction and inaccurate early prediction of heart disease. To overcome these issues, this paper proposed a sparse autoencoder with Galactic Swarm

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## Document details - A Novel Approach for Oil Spill Detection from SAR Images

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023; Chennai, India; 14 December 2023 through 15 December 2023. Category number CFP23G27-ART. Code 198193

**A Novel Approach for Oil Spill Detection from SAR Images(Conference Paper)**

Raoop, D., Subashini, M., Meshupriya, S., Prabha, R., Senthil, G.A.  
 \*Sri Sakram Institute of Technology, Chennai, India  
 \*Agri College of Technology, Chennai, India

**Abstract**

The main aim of this study is to identify instances of oil spills through the use of images taken from satellite. Synthetic Aperture Radar (SAR) imaging is a prevalent method for oil spills detection. Oil spills into the ocean are becoming commonplace, and they constitute a substantial portion of marine pollution, which can have negative impacts on the biological and economic systems. Object detection is a crucial and commonly studied area in image processing and earth observation, with important applications for society. The prompt detection of a marine oil spill is essential to the success of any cleanup operation, and this can be facilitated by efficient object detection methods. Currently, the system utilizes SENTINEL software that employs machine learning and deep learning techniques. However, the software has limitations in differentiating between mineral spills and biogenic surface films. MATLAB is a powerful technical computing language that enables users to perform complex computations, create visualizations, and write programs in an intuitive environment. It uses scientific notation to express numbers and values in a standard format. Tensor operations is utilized as a method for detection of oil spills and this approach is

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 Deepfake Video Production Using Attention-Based CNN and Mid-Frequency Cepstral Coefficients

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 Face Recognition based Automated Smart Attendance using Hybrid Machine Learning Algorithm and Computer Vision

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## Document details - A New Sentiment and Fuzzy Aware Product Recommendation System Using Weighted Aquila Optimization and GRNN in e-Commerce

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Information Technology and Control
Volume 52, Issue 3, 25 September 2023, Pages 617-637

**A New Sentiment and Fuzzy Aware Product Recommendation System Using Weighted Aquila Optimization and GRNN in e-Commerce(Article)(Open Access)**

Rasawati, L.A., Reju, D.N., Sujitha, E.

\*Department of Computer Science and Engineering, Sri Sakram Institute of Technology, Chennai, 600044, India  
 \*Department of Computer Science and Engineering, R.M.K. Engineering College, Kavaraipet, 601206, India  
 \*Department of Computer Science and Engineering, Sreeva Engineering College, Chennai, 602205, India

**Abstract**

Customer reviews are playing an important role in e-commerce for increasing sales by knowing the customer's purchase pattern and expectations. The reviews that are collected after completing their purchase reflect the quality and services in e-commerce. The user's reviews are characterized and categorized through sentiment and semantic analysis. Moreover, the sentiment and semantic classification processes are also performed to predict the user's purchase patterns and liked products. However, the available classification is not able to predict the user's purchase patterns. This paper propose a new Product Recommendation System (PRS) to predict the appropriate product for users based on their purchase behavior and pattern. The proposed recommendation system incorporates the standard data preprocessing tasks like tokenization

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Thirunavukkarasu, J., Chinnazamy, A.  
 Enhancing the precision of prediction in heart disease diagnosis by utilizing machine learning

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Thirunavukkarasu, J., Shiny Jebamathi, M., Varsha, R.  
 Deep Multimodal Fusion for Depression

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## Document details - Cursor Control Based on Eyeball Movement Using Deep Learning

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 2023 Intelligent Computing and Control for Engineering and Business Systems, ICCESBS 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCF23GZ7-ART; Code 198193

**Cursor Control Based on Eyeball Movement Using Deep Learning(Conference Paper)**

Sarodhi, K.R., Punitha, R., Alahwariya, N.S., Rathistree, M.  
 \*Sri Sakram Engineering College, Department of Information Technology, Tamil Nadu, Chennai, India  
 \*Sri Sakram Institute of Technology, Department of Information Technology, Tamil Nadu, Chennai, India

**Abstract**

We bring forth the notion of using the eyes to control the computer cursor. Finding a person's gaze point or tracking their eye movement is called eye tracking. Without requiring hardware input, it is feasible to interact with interfaces directly by capturing eye movements and using them as control signals. It proves to replace the mouse, the piece of hardware most essential for using a computer. In order to classify the individual eyeballs of both human eyes with a high degree of accuracy and control over movement, this system additionally implements a deep learning approach with some built-in data set. For those with restricted mobility, this concept will be quite helpful. Python, OpenCV, NumPy, and a few more facial recognition programs are required software for this method, along with a simple webcam. The HDG (Histogram of Oriented Gradients) is a popular tool for building face detectors. © 2023 IEEE.

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## Document details - Entropy structural characterization of zeolites BCT and DFT with bond-wise scaled comparison

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Scientific Reports  
 Volume 13, Issue 1, December 2023, Article number 10679

**Entropy structural characterization of zeolites BCT and DFT with bond-wise scaled comparison(Article)(Open Access)**

Arockiaraj, M., Paul, D., Ghani, M.U., Tigga, S., Chu, Y.-M., &  
 \*Department of Mathematics, Loyola College, Chennai, 600034, India  
 \*Department of Mathematics, Sri Sakram Institute of Technology, Chennai, 600044, India  
 \*Institute of Mathematics, Khawaja Fareed University of Engineering & Information Technology, Abu Dhebi Road, Rahim Yar Khan, 64200, Pakistan

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**Abstract**

Entropy of a connected network is a quantitative measure from information theory that has triggered a plethora of research domains in molecular chemistry, biological sciences and computer programming due to its inherent capacity to explore the structural characteristics of complex molecular frameworks that have low structural symmetry as well as high diversity. The analysis of the structural order is greatly simplified through the topological indices based graph entropy metrics, which are then utilized to predict the structural features of molecular

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## Document details - IOT Translator for Sign Language based on Glove

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCEBS 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category number: CFP23G27-ART; Code: 198193

### IOT Translator for Sign Language based on Glove (Conference Paper)

Methupriya, S., Roopa, D., Subashini, M.  
Sri Sairam Institute of Technology, India

**Abstract**

Sign language is used by individuals with hearing difficulties to communicate with outside world. This language is made up of expressions, emotions and hand gestures made up of different type of signals. Hand movement along with the emotion together make up the message to be communicated. Though this works perfectly, it takes time to learn this language. Even after learning this person with hearing and speaking difficulties cannot communicate with a larger audience as the other party might not understand this language. There are multiple varieties of sign language available as per the local region like ASL - American Sign Language, ISL - Indian Sign Language, GSL denoting German sign language. All these languages are specifically customized to the local geography to improve the effectiveness of communication. However the key focus is to make speech impaired individuals to communicate with common man. Our solution is to create a middleware that can detect and convert sign language to a audio output heard through a android hand held. This can also be useful to monitor the health of the individuals in a centralised environment. © 2023 IEEE.

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Unnathi, E., Sreeja, A.K., Teja, R.  
Real-Time Sign Language Recognition and Translation with Glove and Mobile Integration

(2024) 2nd IEEE International Conference on Advances in Information Technology, ICATIT 2024 - Proceedings

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Journal of Materials Chemistry A

Volume 11, Issue 2, 28 November 2023, Pages 1115-1127

### MXene-MOF architectural hybrid-supported nickel single-atom catalysts for hydrogen evolution reactions (Article)

Chellamany, G., Arumugasamy, S.K., Kuppasamy, S., Ekambaram, V., Rajagopalan, K., Venkateswara, S., Dheevigamani, P., Choi, M.J., Govindaraju, S., Yan, K.

<sup>1</sup>Department of Biotechnology, Gachon University, Gyeonggi-do, 13120, South Korea  
<sup>2</sup>Department of Chemical and Biochemical Engineering, Dongguk University, Seoul, 04620, South Korea  
<sup>3</sup>Department of Chemistry, School of Advanced Sciences, Vellore Institute of Technology (VIT), Tamil Nadu, Vellore, 632016, India

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**Abstract**

Single-atom catalysts (SACs) are becoming high-performance materials with efficient catalytic potential toward heterogeneous catalysis. In this view, synthesizing SACs via strong interaction with a support matrix is a crucial step. MXenes are the most frequently used two-dimensional support matrices; however, the hybridization of MXene-MOF toward catalysis is less explored. Herein, we report the fabrication of architectural arrangement of MXene-MOF to support nickel single atoms using a pyrolysis strategy. Here, the Ti vacancy sites are loaded with Ni atoms.

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High-throughput screening of efficient graphdiyne-supported transition metal single atom forward water electrolysis and oxygen reduction

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## Document details - Automatic localization and classification of intervertebral disc herniation using hybrid classifier

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Biomedical Signal Processing and Control  
 Volume 86, September 2023, Article number 105291

**Automatic localization and classification of intervertebral disc herniation using hybrid classifier**(Article)

Vidarmathi, G., Nirmala Devi, S.

<sup>1</sup>ECE, Sri Sai Ram Institute of Technology, Tamilnadu, Chennai, India  
<sup>2</sup>ECE Department, Anna University, Tamilnadu, Chennai, India

**Abstract**

Lumbar disc herniation detection is challenging due to numerous problems, including a complex background, and small joints. Deep learning-based methods have set new benchmarks for much computer vision and pattern recognition research throughout the last five years. In this proposed work, a novel method for the localization of horizontal and vertical projection of Intervertebral Discs (IVDs) in Lumbar spine MRI images based on YOLOv2 (You only look once v2, Intervertebral Disc) is suggested, which includes Enhanced Visual Geometry Group 16 (EVGG16) as the YOLOv2 model's backbone. In this framework, features are taken from the  $l_{11}$ , which is the output layer of EVGG16 and mapped fed into the YOLOv2 model. Following that, the exact intervertebral discs are detected by finding the intersection of the IVDs localized horizontal and vertical projections, from which IVDs features are learned using Enhanced AlexNet (EAlexNet). It includes 8 weight layers and

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Singh, M., Ansari, M.S.A., Gaur, M.C.  
 Detection of fractional difference in intervertebral disk MRI images for recognition of low back pain

(2025) *Image and Video Computing*  
 Jonaki, R., Lakshmi, D.  
 Hybrid model-based early diagnosis of osteoporosis disorders using convolutional neural network and refined logistic regression

(2023) *Eurasip Journal on Image and Video Processing*  
 Huang, S., Deng, G., Kong, Y.  
 Exploring deep learning strategies for intervertebral disc herniation detection on veterinary MRI

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AIP Conference Proceedings  
 Volume 2588, 2 June 2023, Article number 050005

3rd International Conference on Engineering Facilities Maintenance and Management Technologies, EFAMT 2021, Botswana International University of Science and Technology-Polopae, Virtual, Botswana, 28 October 2021 through 29 October 2021; Code 189504

**Design and development of novel security approach designed for cloud computing with load balancing**(Conference Paper)

Kaliyandil, M., Murugesu, J., Subburaj, S.K., Ganasan, S., Chandimathesath, V.

<sup>1</sup>CSE, Vel Tech Rangaraj Dr. Sagunthala R&D Institute of Science and Technology, Tamilnadu, Chennai, 600062, India  
<sup>2</sup>CSE, National Engineering College, K.R.Nagar, Tamilnadu, Kovilpatti, 626305, India  
<sup>3</sup>EEE, New Prince Shri Bhovani College of Engineering and Technology, Tamilnadu, Chennai, 600072, India

**Abstract**

A cloud computing environment is a computer environment that provides services and stores data as virtualized data warehouse and information that is accessed remotely using scalable and measurable resources. As more enterprise applications and critical information and data migrate to cloud platforms, cloud computing is growing more popular. On the other side, a major impediment to cloud adoption is a lack of

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 Al-Fattouh, X.R.R., Senthilkumar, S., Jayalaxmi, M.  
 Impact of Energy Storage Technologies on Grid-Connected Renewable Energy Systems

(2024) *E3S Web of Conferences*  
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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCEBS 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCFP23G27-ART; Code 198193

**WSN Based Industrial Pollution Monitoring System(Conference Paper)**

Sweatina Shrami, S., Leishmi Devi, R., Sangeetha, K.  
Sri Sai Ram Institute of Technology, Department of Electronics and Communication Engineering, Chennai, India

**Abstract**

People's lives are becoming more uncertain as a result of workplace disasters, particularly for employees. Every worker in any sector needs a safe working environment, but making the workplace safer is crucial. Our initiative strives to create a healthy workplace for employees in the chemical, steel, petroleum industries. Serious disasters resulting from the leakage of hazardous gases used in production cause deaths and are also harmful to the environment. The proposed work deals with a new continuous monitoring method to prevent such unforeseen events and it will keep an eye on the working environment, where these data will be updated in the cloud in real time utilizing the IOT's which is a futuristic technology that proposes the linking of various items. This frequently modifies the automation of numerous daily tasks. The method is adaptable and may be used in a variety of environment. This initiative promotes both civilian and industrial workers' OSH (occupational safety and health). © 2023 IEEE.

**Author keywords**

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Sriram, S., Chandrakala, D., Kavalaveni, K.  
Eco-Friendly Production Forecasting in Industrial Pollution Control with IoT and Logistic Regression  
(2024) 2024 International Conference on Intelligent Systems for Cybersecurity, IJCS 2024  
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**A Comprehensive Investigation to Examine the Preferences and Satisfaction Levels of Outpatients in Relation to the Quality of Services Provided by Hospitals in the Vellore District(Conference Paper)**

Venkatesh, P., Murugan, K., Ramu, M., Manikandan, M., Seethaiah, C.R., Krishnamoorthi, M.  
\*Sri Sakin Engineering College, Department of Management Studies, Chennai, India  
\*Sri Sakin Institute of Technology, Chennai, India  
\*Krista Jayanti Collage, Autonomous, Faculty of Commerce and Management, Bengaluru, India

**Abstract**

The satisfaction of one's customers is still the most intriguing aspect of doing company. Any business should seek to maximize earnings while

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Singh, N., Prashanth, K., Justin, T.S.R.  
A Descriptive Examination on the Efficacy of Artificial Intelligence Applications in the Healthcare Industry in India  
(2024) Studies in Systems, Decision and Control  
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Journal of Mines, Metals and Fuels

Volume 71, Issue 9, September 2023, Pages 1286-1292

### Effects of Injection Pressure on Performance and Emission Characteristics of CI Engine using Waste Cooking Oil (WCO) Blend(Article)

Sabarath, R., Golden Ranjith Nimal, R.J., Rajasekar, R., Thirumovalavan, S., Sengamooswaran, R.

<sup>1</sup>Department of Mechanical Engineering College, BST, BHER, Tamil Nadu, Chennai, 600 073, India  
<sup>2</sup>Department of Mechanical Engineering College, Jai Sriram Engineering College, Tamil Nadu, Tirupur, 638 660, India  
<sup>3</sup>Department of Mechanical Engineering College, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, 600 044, India

#### Abstract

For a long period of time, vegetable oil cannot be used directly in a direct injection diesel engine. The tolerance tests may indicate significant problems. The outcome of Injection Pressures (IP) on the performance and emissions of a diesel engine powered by waste cooking oil biodiesel were explored in this study. It is investigated and standard diesel results are compared to the performance characteristics and emission studies of a single cylinder, four-stroke, direct-injection diesel engine fueled with used cooking oil in 20% (on a mass basis) blends. This study established the appropriateness of using cooking oil. The experiment consisted of running at a constant speed of 1500 rpm and then loaded gradually. The tests were conducted at 5 different loading are 0%, 25%, 50%, 75%, and 100% of the load in kW with compression ratio of 17.5:1. The result of adjusting the injection pressure to 185–235 bars with a gap of 25 bars, with the original IP set at 210 bar. Fuel injection pressure is critical in

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## Document details - CAYLEY SUBSPACE SUM GRAPH OF VECTOR SPACES

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International Electronic Journal of Algebra

Volume 33, Issue 33, 1 September 2023, Pages 1-17

### CAYLEY SUBSPACE SUM GRAPH OF VECTOR SPACES(Article)(Open Access)

Kalaimurugan, G., Gopiarthi, S., Chelvan, T.T.

<sup>1</sup>Department of Mathematics, Thiruvalluvar University, Tamil Nadu, Vellore, 632315, India  
<sup>2</sup>Department of Mathematics, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, 600094, India  
<sup>3</sup>Department of Mathematics, Manonmaniam Sundaranar University, Tamil Nadu, Tirunelveli, 627 012, India

#### Abstract

Let  $V$  be a finite dimensional vector space over the field  $F$ . Let  $S(V)$  be the set of all subspaces of  $V$  and  $A \subseteq S(V) = S(V) \setminus \{0\}$ . In this paper, we define the Cayley subspace sum graph of  $V$  denoted by  $Cay(S^*(V), A)$ , as the simple undirected graph with vertex set  $S^*(V)$  and two distinct vertices  $X$  and  $Y$  are adjacent if  $X \cdot Z = Y \cdot Z = X$  for some  $Z \in A$ . Having defined the Cayley subspace sum graph, we study about the connectedness, diameter and girth of several classes of Cayley subspace sum graphs  $Cay(S^*(V), A)$  for a finite dimensional vector space  $V$  and  $A \subseteq S^*(V) = S(V) \setminus \{0\}$ . © 2023, Maceitepe University. All rights reserved.

#### Author keywords

Cayley sum graph, diameter, girth, planar, subspace, vector space

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International Journal on Interactive Design and Manufacturing  
Volume 12, Issue 6, December 2021, Pages 3112-3121

### Application of grey-ANFIS system to optimize the drilling characteristics of nano SiC reinforced Al matrix composites(Article)

Chokkavarthy, V.V.K., Rajeshan, T., Vijayan, D., Palanikumar, K.

\*Sri Chandrasekharrao Saraswathi Vigneo Maha Vidyalaya, Enathur, Kanchipuram, 631561, India  
\*Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Chennai, 600 044, India

**Abstract**

The present research examines cryogenic coolant's performance and effect on thrust force, burr height, cutting temperature, and surface finish while drilling nano SiC reinforced Al matrix composites over dry machining. The vertical computer numeric control (CNC) machining center assisted with cryogenic LN<sub>2</sub> coolant is used to conduct the drilling tests with a carbide drill of 10 mm having 90°, 118°, and 135° point angles. Taguchi L<sub>16</sub> orthogonal array is employed in planning the drilling experiments. A grey-based ANFIS algorithm was implemented to optimize drilling parameters: feed rate, spindle speed, drill point angle, and wt% of nano SiC. The reduced friction in cryogenic LN<sub>2</sub> resulted in lower temperature and surface roughness. After the drilling experiments, the machined surface is further investigated through a scanning electron microscope (SEM). This investigation revealed that applying cryogenic LN<sub>2</sub> coolant in drilling Al matrix composites reinforced with SiC.

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Yadav, S.K., Ghosh, S., Sivanandam, A.  
An intelligent hybrid optimization approach to improve the end milling performance of Incoloy 925 based on ANN-NSGA-II-ETOPSIS

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Baraly, A., Chatterjee, S., Ghadei, R.K.  
Optimization of hybrid AS-MMC drilling using a new BSM-RATHM-based approach

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Volume 2912, Issue 1, 20 October 2021, Article number: 0171865

3rd International Conference on Innovations in Thermal, Manufacturing, Structural, and Environmental Engineering, ICTMSEE 2022; Truchirappalli, India, 22 April 2022 through 23 April 2022, Code 103725

### Aquaculture monitoring and automation system(Conference Paper)

Satheesh, P., Yashini, S., Preethi, L., Goyethirayanambal, M.

Department of Information Technology, Sri Sai Ram Institute of Technology, Chennai, India

**Abstract**

A simple assessment of the scenario is that the farmers are unable to maintain their fish farm on a regular and efficient basis. Our initiative aims to identify and automatically rectify problems such as a drop in water level, a decrease in dissolved oxygen content, an increase in water temperature, and a decrease in suspended particles (turbidity) that affect the lives of fishes. In this panel, the Arduino UNO is used to make connections between all the sensors and the Arduino UNO, which is then controlled by the Arduino UNO. [4] If one of these sensors identifies an issue, a notification is immediately sent to the farmer, and the sensor's value is updated on the website at the same time. This website will provide a weekly report that will assist farmers in managing their ponds and wetlands, and it will be updated regularly. This strategy saves farmers time and effort by allowing them to move anywhere they like without having to worry about their fish stock's safety. Additionally, labor costs are being lowered, which will benefit the agricultural economy considerably. © 2023 Author(s).

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 2023 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems, ICSES 2023; Chennai; India: 14 December 2023 through 15 December 2023; Category number: CFP23AF4-AIT1; Code 398265

**A Smart and Reliable Health Monitoring System for Covid-19 using Internet of Things (Conference Paper)**

Ramachandran, R., Suganthi, S.U., Mani, A., Rajalakshmi, R., Prabu, R.T.

<sup>1</sup>Rajalakshmi Engineering College, Department of Biomedical Engineering, Chennai, India  
<sup>2</sup>Sri Sairam Institute of Technology, Department of AI & DS, Chennai, India  
<sup>3</sup>S.A. Engineering College, Department of CSE, Chennai, India

View additional affiliations

**Abstract**

Health surveillance devices based on the Internet of Things might be of tremendous use during the current COVID-19 epidemic for patients who are afflicted with the virus. Internet of Things (IoT) health monitoring solutions lessen the need for patients and physicians to meet often. However, many events need to be monitored and observed by medical professionals on a regular basis. We have used technology in our

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**Empirical Evaluation of Video Surveillance based Crime and Anomaly Detection System using Hybrid Deep Learning Strategy (Conference Paper)**

Kishore Kumar, A., Suganthi, P., Sakshi Saravanan, N., Joel, T., Shanmugam, S.

<sup>1</sup>Ramakrishna Engineering College, Department of Robotics and Automation, Vattamalaipalayam, Coimbatore, India  
<sup>2</sup>Sri Sairam Institute of Technology, Department of CSE, Chennai, India  
<sup>3</sup>S.A. Engineering College, Department of EEE, Chennai, India

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**Abstract**

In the realm of urban safety and security, the development of efficient and accurate crime detection systems is of paramount importance. This study presents an empirical evaluation of a cutting-edge Video Surveillance-based Crime and Anomaly Detection System (CADS) that harnesses the power of Hybrid Deep Learning: Interwoven Artificial Neural Networks (ANN) and Recurrent Neural Networks (RNN). CADS has been

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Proceedings of the 2023 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems, ICISES 2023  
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 2023 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems, ICISES 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberICP23AF4; ARII; Code 398245

**Strategic Integration of CNN, SVM, and XGBoost for Early-stage Tumor Detection using Hybrid Deep Learning Method(Conference Paper)**

James, T.P.G., Karthikeyan, B.V., Asheek, P., Dhaasarethy, Suganya, R., Maharaja, K.

Sri Sai Hom Institute of Technology, Computer Science and Engineering, Chennai, India

**Abstract**

A tumor is an unnatural cell development that can develop into cancer. Most often, cancer affects the brain, kidneys, lungs, liver, and other organs of the body. MRI (Magnetic Resonance Imaging) scans are the official method for locating tumors. Detecting a tumor in its early stages and using the resulting image to spot aberrant tissue growth allows for early cancer treatment. Early detection of tumors plays a pivotal role in improving the prognosis and overall survival rates of patients. A Hybrid Model was constructed which composed of a self-defined Convolution Neural Network (CNN), Support Vector Machine (SVM), and Extreme Gradient Boosting (XGBoost) is applied in detecting the presence of tumors

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Paul, S., Sani, B.K., Baranidharan, B.  
 Brain Tumor Detection Using Deep Learning Techniques  
 (2024) Proceedings - 2nd International Conference on Advancement in Computational and Computer Technologies, ICACTT 2024  
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## Document details - Set-independence graphs of vector spaces and partial quasigroups

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Journal of Algebra Combinatorics Discrete Structures and Applications  
 Volume 10, Issue 1, 16 September 2023, Pages 161-173

**Set-independence graphs of vector spaces and partial quasigroups(Article)(Open Access)**

Falcón, R.M., Copinath, S., Kolemanujan, G.

<sup>1</sup>Department of Applied Mathematics I, Universidad de Sevilla, Sevilla, Spain  
<sup>2</sup>Department of Mathematics, Sri Sakram Institute of Technology, Chennai, India  
<sup>3</sup>Department of Mathematics, Thiruvalluvar University, Tamil Nadu, Vellore, India

**Abstract**

As a generalization of independence graphs of vector spaces and groups, we introduce the notions of set-independence graphs of vector spaces and partial quasigroups. The former are characterized for finite-dimensional vector spaces over finite fields. Further, we prove that every finite simple graph is isomorphic to either the independence graph of a partial quasigroup or an induced subgraph of the latter. We also prove that isomorphic partial quasigroups give rise to isomorphic set-independence graphs. As an illustrative example, all finite graphs of order  $n \leq 5$  are identified with the independence graph of a partial quasigroup of the same order. © 2023, Jscodesmth Institute. All rights reserved.

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7th International Conference on Image Information Processing, ICIIP 2023; Jaypee University of Information Technology (JUIT)Solari, India; 22 November 2023 through 24 November 2023; Category numberC:FP2369 N-ART; Code 299898

**Optimizing Offloading in MEC-Enabled Vehicular Networks Using Adaptive PSO and V2V Communication(Conference Paper)**

Shinde, S.S., Paramaswari, S., Arun Raj, S.R., Kannan, K., Rajesh, N., Kiran, A.

<sup>1</sup>Nimcoo, Department of Electrical Engineering, Maharashtra, Sangli, 415409, India  
<sup>2</sup>Sri Sairam Institute of Technology, Department of Eee, West Tambaram, Tamilnadu, Chennai, 600644, India  
<sup>3</sup>U.B.S.T College of Engineering, Department of Electronics & Communication Engineering, Karnataka, Davanagere, 577004, India

View additional affiliations

**Abstract**

With the advancements in mobile communication technology, intelligent transportation systems have evolved, leading to higher demands for vehicular communications. However, computation-intensive and power-consuming applications in these systems result in significant energy consumption and computation costs, posing challenges for onboard systems. To ensure a better Quality of Experience (QoE), traffic offloading and scheduling in vehicular networks become essential. This paper introduces a joint offloading strategy for Mobile Edge Computed (MEC)

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## Document details - Optimizing Wireless Performance in Wearable Flexible Electronics: Antenna Strategies

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2023 IEEE Global Conference on Information Technologies and Communications, GCITC 2023, Karnataka, India; 1 December 2023 through 3 December 2023; Category numberCFP23001 ART; Code 299957

**Optimizing Wireless Performance in Wearable Flexible Electronics: Antenna Strategies(Conference Paper)**

Abraham, J., Paramaswari, S., Nirmala, D., Panjavarom, B., Rajasekar, A., Ashok, P.

<sup>1</sup>B.P.C College, Department of Electronics, Kerala, Ernakulam, India  
<sup>2</sup>Sairam Institute of Technology, Department of Electronics and Communication Engineering, Tamilnadu, Chennai, India  
<sup>3</sup>Prince Shri Venkateshwar Padmavathy Engineering College, Department of Eee, Tamilnadu, Chennai, India

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**Abstract**

Flexible electronics refers to the utilization of pliable plastic substrates in the construction of elastic and bendable electrical circuits. Unlike conventional semiconductors and glass substrates, flexible electronics open up possibilities for entirely new product designs. This innovation hinges on the fabrication of electronic components on flexible plastic substrates like transparent conductive polyester film or polyimide.

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Ashok, P., Hollur, G.  
 Strategy in Action: Harnessing Cloud Services and Wired Broadband for Seamless Operations

(2024) 2024 2nd World Conference on Communication and Computing, WCCOF 2024

Ashok, P., Hollur, G.  
 Wireless Broadband Unleashed: Charting Regulatory Pathways for Broadband Development

(2024) 2024 2nd World Conference on Communication and Computing, WCCOF 2024

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### Optimizing Wireless Performance in Wearable Flexible Electronics: Antenna Strategies(Conference Paper)

Abraham, J., Paramaswari, S., Nirmala, D., Panjavarani, B., Rajasekar, A., Ashok, P.

<sup>1</sup>B P C College, Department of Electronics, Kerala, Ernakulam, India  
<sup>2</sup>Sairam Institute of Technology, Department of Electronics and Communication Engineering, Tamilnadu, Chennai, India  
<sup>3</sup>Prince Shri Venkateswara Padmavathy Engineering College, Department of Ecs, Tamilnadu, Chennai, India

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#### Abstract

Flexible electronics refers to the utilization of pliable plastic substrates in the construction of elastic and bendable electrical circuits. Unlike conventional semiconductor and glass substrates, flexible electronics open up possibilities for entirely new product designs. This innovation hinges on the fabrication of electronic components on flexible plastic substrates like transparent conductive polyester film or polyimide.

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(2024) 2024 2nd World Conference on Communication and Computing, WCCOMP 2024

Ashok, P., Hollur, G.  
 Wireless Broadband Unleashed: Charting Regulatory Pathways for Broadband Development

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## Document details - Malaria Detection Using Neural Network

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCFP23G27-ART; Code 198193

### Malaria Detection Using Neural Network(Conference Paper)

Kavitha, P., Manimola, G., Sanchana, R., Anushree, U.

<sup>1</sup>Rmk Engineering College, Department of Computer Science and Engineering, India  
<sup>2</sup>Sri Sairam Engineering College, Department of Computer Science and Engineering, India  
<sup>3</sup>Sri Sairam Institute of Technology, Dept. of Information Technology, India

#### Abstract

Malaria is a serious and occasionally fatal disease brought on by a parasite that frequently infects a particular species of mosquito that feeds on people. Malaria frequently results in severe illness in its victims, including high temperatures, chills that make you shiver, and flu-like symptoms. The four different forms of malarial parasites that infect humans are most likely to result in serious infections and, if untreated, death. Malaria can be devastating, but symptoms and deaths from malaria are typically preventable. Deep Learning models, or to be extra unique, Convolutional Neural Network(CNN) models are proposed to compare the proposed and contemporary algorithms exhibits that the accuracy of malaria disease classification primarily based on CNN's is higher than other algorithms. If the CNN approach is supported by the addition of more feature extraction techniques and accurately classifying malaria disease in the image, it is projected that the achievement of the acquired results will increase. © 2023 IEEE.

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## Document details - An Analysis of the Strategic Approach to Utilizing Deep Learning for the Purpose of Predicting Stock Prices

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**An Analysis of the Strategic Approach to Utilizing Deep Learning for the Purpose of Predicting Stock Prices(Conference Paper)**

Venkatesh, P., Ilakkya, T., Ramu, M., Manikandan, M., Senthilnathan, C.R.

<sup>1</sup>Sri Sairam Engineering College, Department of Management Studies, Chennai, India  
<sup>2</sup>Sri Sairam Institute of Technology, Chennai, India  
<sup>3</sup>Sri Sairam Engineering College, Chennai, India

**Abstract**

Stock price forecasting for extended periods of time is notoriously challenging, so it pays to create a solid algorithmic groundwork before diving in. Due to the interconnected nature of stock prices imposed by market dynamics, accurate price forecasting is difficult. The suggested method employs artificial intelligence techniques like recurrent neural networks and Long Short Term Memory to anticipate the share price based on market data. The system's visualizations can now be informed by the training and validation outcomes obtained across several dimensions of input data. The results are promising, suggesting that an LSTM model can be used to forecast the stock market. © 2023 IEEE.

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## Document details - Cluster head based secure routing using optimized dual-discriminator conditional generative adversarial network in wireless ad-hoc networks

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Peer-to-Peer Networking and Applications
Volume 36, Issue 6, November 2023, Pages 2747-2760

**Cluster head based secure routing using optimized dual-discriminator conditional generative adversarial network in wireless ad-hoc networks(Article)**

Prabho, R., Senthil, G.A., Suganthi, S.

<sup>1</sup>Department of Electronics and Communication Engineering, Sri Sai Ram Institute of Technology, Tamil Nadu, Chennai, India  
<sup>2</sup>Department of Information Technology, Agni College of Technology, Tamil Nadu, Chennai, India  
<sup>3</sup>Department of Artificial Intelligence and Data Science, Sri Sai Ram Institute of Technology, Tamil Nadu, Chennai, India

**Abstract**

Designing a routing protocol that can against the attacks of malicious nodes is very essential because open wireless channels make a wireless ad-hoc network (WAN) affected by different security attacks. To overcome this problem, Dual-Discriminator Conditional Generative Adversarial Network Optimized with Nelder-Mead optimization algorithm is proposed in this manuscript for cluster head based secure routing in Wireless Ad-hoc Networks (CH-SR-DCCGAN-NMCA-WAN). Here, the proposed CH-SR-DCCGAN-NMCA-WAN method consists of two phases: (i) to find the

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Prabho, R., G.A.S., Senthil, G.R.  
 Hybrid Multi-path Routing Cluster head prediction based on SDN-enabled IoT and Heterogeneous context-aware graph convolution network

(2024) Peer-to-Peer Networking and Applications

Jayalakshi, S.S., Kumar, B.S., Govitharan, M.S.  
 Cluster based hybrid optimization and kronecker gradient fast based approximate optimum path curvature network for energy efficiency routing in WSN

(2024) Peer-to-Peer Networking and Applications

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## Document details - Chemical aspects of ligand exchange in semiconductor nanocrystals and its impact on the performance of future generation solar cells

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Energy Harvesting and Storage Devices: Sustainable Materials and Methods  
 29 November 2023, Pages 109-131

**Chemical aspects of ligand exchange in semiconductor nanocrystals and its impact on the performance of future generation solar cells (Book Chapter)**

Socsimanickam, A., Sandaram, S.K., Sriharan, M.B.

<sup>1</sup>B and D Division, Intercoast S. I, Madrid, Spain  
<sup>2</sup>Sri Sairam Institute of Technology, Chennai, India  
<sup>3</sup>Crystal Growth Centre, Anna University, Chennai, India

**Abstract**  
 [No abstract available]

ISBN: 978-110846491-9/978-110846491-9 DOI: 10.1306/978110846491-9

**Chapters in this book**  
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- Preface
- An overview of fuel cells and supercapacitors
- Promising electrode materials for hybrid supercapacitors
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- Chemical aspects of ligand exchange in semiconductor nanocrystals and its impact on the performance of future generation solar cells
- Tunnel FET-based ultra-low-power circuits for energy harvesting applications
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## Document details - Solar Panel Power Prediction Using Machine Learning Technique

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCF22627-AR7; Code 198893

**Solar Panel Power Prediction Using Machine Learning Technique(Conference Paper)**

Sektor, S., Koviya, V., Vivekanandan, G., Nethya, P.

<sup>1</sup>Srm Valliammai Engineering College, Department of Information Technology, Chennai, India  
<sup>2</sup>Sri Sairam Institute of Technology, Department of Computer Science and Engineering, Chennai, India  
<sup>3</sup>Srm Institute of Science and Technology, Department of Computational Intelligence, Chennai, India

**Abstract**  
 One of the most significant renewable energy sources produced by photovoltaic panels (PV) is solar energy. Only during the day is solar energy available, and it is affected by meteorological elements such as sun irradiation, cloud coverage, rainfall, and temperature. Due to these variables, the integration of solar power into the power grid is more challenging than it is for conventional energy sources. Changes in the solar power output result in increased electricity demand and higher operating costs. This leads to predict the power produced by solar PV panels accurately. There are numerous methods for estimating the power produced by PV systems, and the data sources used are either just historical data on PV power or historical data on both PV power and weather. In proposed system the data sources used are previous PV power output, weather data

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## Document details - A multi-hop protocol using advanced multi-hop Dijkstras algorithm and tree based remote vector for wireless sensor network

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Journal of Ambient Intelligence and Humanized Computing  
 Volume 14, Issue 6, June 2023, Pages 6877-6895

**A multi-hop protocol using advanced multi-hop Dijkstras algorithm and tree based remote vector for wireless sensor network(Article)**

Hiriharan, U., Rajkumar, K., Akilan, T., Penmalai, A. R.

<sup>1</sup>Department of Computer Science and Engineering, Apex Institute of Technology, Chandigarh University, Punjab, Mohali, India  
<sup>2</sup>Department of Computer Science and Engineering, Faculty of Engineering and Technology, Jain University (Deemed-to-be University), Karnataka, Bengaluru, India  
<sup>3</sup>Department of Computer Science and Engineering, Gopalganj College of Engineering and Technology, Uttar Pradesh, Greater Noida, India

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**Abstract**

Saving energy is primary challenge in wireless sensor network (WSN) to prolong network lifetime within coverage area is key to attain it. Previously different methods have been proposed for this energy efficiency purpose, namely centralized immune-Voronoi deployment algorithm (CIVA) and fixed parameter tractable (FPT) approximation algorithm. These methods showed drawback of creating energy hole problem with increased network coverage and routing problem. In order to overcome these issues, this paper presented an Energy Efficient Cluster Based

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Raj, A., Parlo, P., Kumar, R.  
 A novel hybrid peison-particle swarm optimization algorithm (HPPSO) for global optimization problem  
 (2024) *International Journal of System Assurance Engineering and Management*

Xie, J., Jin, B., Zhang, M.  
 CASSA-MEACS: A Novel Cluster Routing Method for Low-cost Sensor Networks  
 (2023) *IEEE Systems Journal*

Gudla, S., Rao, K.N.  
 Reliable Data Delivery Using Fuzzy Reinforcement Learning in Wireless Sensor Networks  
 (2023) *International Journal of Computer Network and Information Security*

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## Document details - Low-Cost Sensor-Based Irrigation System for Efficient Water Management in Remote Agricultural Regions

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 2023 *Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023*; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCF22627-ART; Code 239833

**Low-Cost Sensor-Based Irrigation System for Efficient Water Management in Remote Agricultural Regions(Conference Paper)**

Ashok, P., James, T.P.G., Pathmanaban, J., Rajith, P., Ragunathan, T., Baranidharan, K.

<sup>1</sup>Sri Sai Ram Institute of Technology, Department of Computer Science and Engineering, Tamilnadu, India  
<sup>2</sup>Sri Sai Ram Institute of Technology, Department of Science and Humanities, Tamilnadu, India  
<sup>3</sup>Sri Institute of Science and Technology, Department of Computing Technologies, Tamilnadu, India

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**Abstract**

Irrigation system with lower cost is considered to be increasingly significant, based on rising growth of human population, demand for food and global warming. This investigation attempts to provide a low cost sensor based irrigation system for monitoring and controlling from remote regions and to optimize water use for farming irrigation. A sensor based irrigation system that monitors and controls the supply of water uses sensors and actuators. It is specifically designed to automate the water supply from reservoirs and to crops over irrigation system. System

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Journal of Ambient Intelligence and Humanized Computing  
 Volume 14, Issue 6, June 2023, Pages 6877-6895

**A multi-hop protocol using advanced multi-hop Dijkstras algorithm and tree based remote vector for wireless sensor network(Article)**

Hiriharan, U., Rajkumar, K., Akilan, T., Panimalar, A.

\*Department of Computer Science and Engineering, Apex Institute of Technology, Chandigarh University, Punjab, Mohali, India  
 \*Department of Computer Science and Engineering, Faculty of Engineering and Technology, Jain University (Deemed-to-be University), Karnataka, Bengaluru, India  
 \*Department of Computer Science and Engineering, Gopalgates College of Engineering and Technology, Uttar Pradesh, Greater Noida, India

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**Abstract**

Saving energy is primary challenge in wireless sensor network (WSN) to prolong network lifetime within coverage area is key to attain it. Previously different methods have been proposed for this energy efficiency purpose, namely centralized immune-Voronoi deployment algorithm (CIVA) and fixed parameter tractable (FFT) approximation algorithm. These methods showed drawback of creating energy hole problem with increased network coverage and routing problem. In order to overcome these issues, this paper presented an Energy Efficient Cluster Based

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Raj, A., Parlo, P., Kumar, R.  
 A novel hybrid peican-particle swarm optimization algorithm (HPPSO) for global optimization problem  
 (2024) *International Journal of System Assurance Engineering and Management*

Xie, J., Jin, B., Zhang, M.  
 CASSA-MEACS: A Novel Cluster Routing Method for Low-cost Sensor Networks  
 (2023) *IEEE Systems Journal*

Gullu, S., Rao, K.N.  
 Reliable Data Delivery Using Fuzzy Reinforcement Learning in Wireless Sensor Networks  
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 Volume 11, Issue 6, June 2021, Article number 1622

**Evaluating Eco-Friendly Refrigerant Alternatives for Cascade Refrigeration Systems: A Thermoeconomic Analysis(Article)(Open Access)**

Shanmugasundar, G., Logesh, K., Cep, R., Raj, R.

\*Department of Mechanical Engineering, Sri Sairam Institute of Technology, Chennai, 600 044, India  
 \*Department of Mechanical Engineering, Vel Tech Rangarajan Dr. Sagunthala RD Institute of Science and Technology, Avadi, 600 062, India  
 \*Department of Machining, Assembly and Engineering Metrology, Faculty of Mechanical Engineering, VSS-Technical University of Ostrava, Ostrava, 708 00, Czech Republic

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**Abstract**

A simple vapor-compression refrigeration system becomes ineffective and inefficient as it consumes a huge energy supply when operating between large temperature differences. Moreover, the recent Kyoto amendment has raised a concern about phasing out some hydrofluorocarbon refrigerants due to their impact on the environment. In this paper, a numerical investigation is carried out to compare the performance of a cascade refrigeration system with two environmentally friendly refrigerant combinations, namely, R170-R404A and R41-

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 (2024) *Case Studies in Thermal Engineering*

Ompalazhi, M., Mahendran, S., Ganes, N.S.  
 3E investigation on novel ORC-ERC system suitable for low temperature applications  
 (2024) *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023; Chennai, India; 14 December 2023 through 15 December 2023. Category numberCFP23G27-ART. Code 198193

**Drugex : The Drug Extincto App(Conference Paper)**

Thomahselvi, D., Mohammed Inamul Hassan, M., Amarith, R.V., Avudainayaki, R.

<sup>1</sup>Sri Sakram Engineering College, Dept. of Information Technology, Chennai, India

<sup>2</sup>Sri Sakram Institute of Technology, Chennai, India

**Abstract**

The development of an app which can be used to anonymously report a drug trafficking incident in a region. If a Drugex App user spots a person who is using drugs or is trafficking drugs he/she can report the information anonymously and safely to the higher officials and this evident information can be used as solid proof to provide justice and help them recover their drug addiction. The user can send all the necessary information he/she has witnessed about the person trafficking drugs with additional proofs which could contain audio, video of that incident. Metadata makes finding and working with data easier - allowing the user to sort or locate specific documents. We use Metadata present in the given photo or video and find the exact location the incident has occurred and report it instantly to higher officials so they could conclude if the information is legitimate and take necessary actions. By this we can stop a lot of Drug Trafficking and many teenagers who are addicted to drugs. One of the critical benefits of the app is its potential to aid in the recovery of drug-addicted individuals. By intervening early and providing the necessary support and resources, authorities can offer rehabilitation and treatment to those in need. This proactive approach addresses the

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**LIDAR Micro Drone with Proximity Sensing(Conference Paper)**

Maheswari, E., Balaji, V., Ezhilarasi, G., Leishmi, D., Abirami, A., Soundarya, M.

<sup>1</sup>Sri Sri Ram Institute of Technology, Department of Eee, Chennai, India

<sup>2</sup>MAL-NEFTI, College of Engineering and Technology, Department of Electrical, Amravati, Eritiro

<sup>3</sup>Amrit Deemed to Be University, Department of Eee, India

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**Abstract**

India is an emerging nation in many ways, mostly in the area of technology. One among them drone's usage is around the corner. Drones are employed across numerous domains and contain a broad range of uses, from thermal inspections to shooting and videography. This is a small, lightweight drone that can fly indoors, outdoors, in forests, or gardens. It uses proximity sensing technology called LIDAR, or light detection and ranging, to detect obstructions. By altering the light and laser frequency in accordance with proximity, the user is continuously informed about the drone's closeness, allowing it to be managed appropriately to prevent collisions. Thus, it is constructed with a micro drone equipped with a LIDAR-based obstacle detecting capability. This drone facilitates an understanding of both drone flight and drone obstacle detection. Additionally, flying it in a dense forest with tight spaces is less dangerous because of its smaller size and cheaper cost. © 2023 IEEE.

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## Document details - An Empirical Study on Information Flow Analysis Through Supply Chain Value Stream Mapping in an Automotive Industry

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Journal of The Institution of Engineers (India): Series C  
Volume 104, Issue 4, August 2023, Pages 695-703

### An Empirical Study on Information Flow Analysis Through Supply Chain Value Stream Mapping in an Automotive Industry(Article)

Murali, S., Belesubramanian, M., Karur, R.S.  
 \*Sri Sairam Institute of Technology, Chennai, 600044, India  
 \*R.M.K.College of Engineering and Technology, Chennai, 601206, India  
 \*Hyundai Transys Laser India Pvt Ltd, Chennai, 601206, India

**Abstract**  
 Effective information flow is a key parameter for enhancing the performance of the supply chain. Information sharing provides a vital method for the endurance of enablers and enterprises to integrate the supply chain. This study explores the effectiveness of the supply chain information sharing practice of Indian automotive industries through the identification of the most important information sharing type, thereby improving the information sharing practice level. In this study, information about the demand planning is identified as the most important information and is frequently shared among the supply chain of Indian automotive industries manufacturing the interior parts of global passenger car. Current state value stream mapping was developed to analyze the demand information flow in the supply chain. This empirical study reveals that there is scope for improvement in information sharing practice by reducing the lead time of forward and reverse information flow between the supply

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## Document details - Assessing Water Quality Using Machine Learning

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 2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023, Chennai, India, 14 December 2023 through 15 December 2023, Category number: CFP23G27-ART, Code 198393

### Assessing Water Quality Using Machine Learning(Conference Paper)

Nirmala Devi, P., Harithra, S., Keerthana, J., Pavithra, R., Thanyashree, S.  
 Sri Sairam Institute of Technology, Dept of Computer Science and Engineering, Chennai, India

**Abstract**  
 For all living things, water is one of the most crucial natural resources. The ability to access clean water is essential for human survival. Beyond drinking, water is also necessary for animal consumption, irrigation, as well as domestic and commercial uses. For the stability and conservation of the environment, it is crucial to monitor the quality of treated wastewater to protect the ecosystem. The issue of poor water quality is getting worse every day due to a number of factors & other dangerous chemicals. Laboratory assessments of water samples to determine their fitness to use is a vital step in the water quality assurance process. However, laboratory assessments require adherence to stringent measures, which might be difficult to comply with. Machine learning (ML) has emerged in recent years as a viable and cheaper solution to replace the lab-based assessments, with a limited availability of sufficient data to train the ML models. Unfortunately, such data is not always available, especially in less developed countries. So that the work attempts to fill this gap by creating sample sized datasets that can be used to train & test the ML models. In simple words the datasets were curated by aggregating data from smaller datasets on related concepts, then processed and labeled to make them useful for supervised ML models. (S) 2023 IEEE

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Mittal, V., Singh, N., Agarwal, S.  
 Classification Model for Parametric Analysis and Water Quality Monitoring  
 (2024) 2024 15th International Conference on Computing Communication and Networking Technologies, ICCCN 2024  
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## Document details - Optimal shape selection of pseudo-rigid-body model compliant centrifugal clutch manufactured by thermoplastics using TOPSIS approach

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Journal of Thermoplastic Composite Materials  
 Volume 36, Issue 11, November 2023, Pages 4436-4456

**Optimal shape selection of pseudo-rigid-body model compliant centrifugal clutch manufactured by thermoplastics using TOPSIS approach(Article)**

Fen, A., Subramanian, K., Gopal, H., Palani Kumar, K.   

<sup>1</sup>Department of Mechanical Engineering, University College of Engineering, BIT Campus, Tiruchirappalli, India  
<sup>2</sup>Department of Automobile Engineering, University College of Engineering, BIT Campus, Tiruchirappalli, India  
<sup>3</sup>Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Chennai, India

**Abstract**  
 This paper discusses and analyses a compliant centrifugal clutch with different materials. Compliant centrifugal clutch specimens required for investigation are prepared by an injection moulding process. Experiments are conducted based on the experiments designed as per Taguchi's Design of Experiment (DoE), an L<sub>27</sub> Orthogonal Array (OA) is formulated and a multi-response optimisation approach Technique of Order Preference Similarity to the Ideal Solution (TOPSIS) is adopted for optimising torque carrying capacity, wear rate and contact temperature.

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 Ling, M., Zhao, L., Wu, S.  
 Nonlinear Evaluation of a Large-Stroke Collar L-Shape Compliant Guiding Mechanism With Constant Stiffness  
 (2024) Journal of Mechanical Design  
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## Document details - Investigation of the Mechanical Behavior of Acacia—Raffia Natural Fiber Composite

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Polymers  
 Volume 15, Issue 15, August 2023, Article number 3249

**Investigation of the Mechanical Behavior of Acacia—Raffia Natural Fiber Composite(Article) (Open Access)**

Karthick, P., Vijaya Romesh, B.M., Palani Kumar, K.   

<sup>1</sup>Department of Mechanical Engineering, Anna University, Chennai, 600025, India  
<sup>2</sup>Department of Mechanical Engineering, Sri Sai Ram Engineering College, Chennai, 600044, India  
<sup>3</sup>Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Chennai, 600044, India

**Abstract**  
 Nowadays, industries place a strong emphasis on low-cost, biodegradable materials with long lifespans. As a result, businesses are concentrating on creating composite materials utilizing the world's plentiful supply of natural fibers. In this study, acacia and raffia fibers are combined with epoxy resin and a hand layup method to create a biodegradable composite laminate. This article investigates the effect of fiber orientation on the mechanical and morphological evaluation of composite materials that have been manufactured. Three different kinds of composites were fabricated in this work: Composite 1, which contained acacia fiber; Composite 2, which was built of acacia and raffia fiber; and Composite 3, which was made of raffia fiber. While Composite 2 is a hybrid composite in this instance, Composites 1 and 3 are monofiber

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 Rasheed, A.B., Roychow, A.M., Shaily, S.T.  
 An experimental study of physical, mechanical, and thermal properties of flax fiber reinforced hybrid epoxy resin laminated composite  
 (2024) Results in Engineering  
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Volume 15, Issue 15, August 2023, Article number 3249

**Investigation of the Mechanical Behavior of Acacia—Raffia Natural Fiber Composite(Article) (Open Access)**

Karthick, P., Vijaya Romneth, B.M., Palanikumar, K.

\*Department of Mechanical Engineering, Anna University, Chennai, 600025, India  
 †Department of Mechanical Engineering, Sri Sri Ram Engineering College, Chennai, 600044, India  
 ‡Department of Mechanical Engineering, Sri Sri Ram Institute of Technology, Chennai, 600044, India

**Abstract**  
 Nowadays, industries place a strong emphasis on low-cost, biodegradable materials with long lifespans. As a result, businesses are concentrating on creating composite materials utilizing the world's plentiful supply of natural fibers. In this study, acacia and raffia fibers are combined with epoxy resin and a hand layup method to create a biodegradable composite laminate. This article investigates the effect of fiber orientation on the mechanical, and morphological evaluation of composite materials that have been manufactured. Three different kinds of composites were fabricated in this work: Composite 1, which contained cocco fiber; Composite 2, which was built of acacia and raffia fiber; and Composite 3, which was made of raffia fiber. While Composite 2 is a hybrid composite in this instance, Composites 1 and 3 are monofiber

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Rachid, A.B., Royhan, A.M., Shally, S.I.  
 An experimental study of physical, mechanical, and thermal properties of flax fiber reinforced hybrid epoxy resin laminated composite  
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2023 International Conference on Advances in Computation, Communication and Information Technology, ICACCICT 2023  
 2023, Pages 1118-1123  
 2023 International Conference on Advances in Computation, Communication and Information Technology, ICACCICT 2023, Coimbatore, India, 23 November 2023 through 24 November 2023. Category number: CFP23UIC4-ART. Code 198271

**Enhancing Cloud Security: A Deep Cryptographic Analysis(Conference Paper)**

Dashpende, A.G., Srinivasan, C., Reman, R., Rajarajan, S., Adhivaryu, R.

\*Pune Symbiosis International (Deemed University), Symbiosis Law School (SLS), Maharashtra, Pune, India  
 †Sreevaitha University, Department of Cse, Sreevaitha Institute of Medical and Technical Sciences, Tamil Nadu, Chennai, India  
 ‡Symbiosis International (Deemed University), Symbiosis Institute of Business Management Pune, Maharashtra, Pune, India

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**Abstract**  
 Cloud computing has transformed data storage, processing, and access. However, as cloud-based services grow more popular, protecting sensitive data is crucial. Cryptographic algorithms provide strong encryption, safe key exchange, and data integrity, improving cloud security. Cloud computing uses Secure Hash Algorithm (SHA), Rivest-Shamir-Adleman (RSA), Elliptic Curve Cryptography (ECC), Advanced Encryption Standard (AES), and the Diffie-Hellman algorithm key exchange. For verifying data integrity by Cloud computing uses SHA. SHA protects data during transmission and storage by creating a unique hash value for each block. This prohibits cloud data manipulation, ensuring data integrity. Asymmetric cloud encryption algorithm RSA is commonly used. Public and private keys ensure data transfer and secrecy. Cloud service providers and users must ensure data security through encryption, firewalls, secure connections, and regular updates to maintain data security.

**Cited by 39 documents**

Perumal, P., Mathivanan, B., Deepa, K.  
 Color based Product Sorting Machine using Raspberry Pi  
 (2024) *Proceedings of the 5th International Conference on Smart Electronics and Communication, ICSEEC 2024*

Rajasekaran, M., Saveri, S., Manikandaprabhu, K.  
 Next-Gen Coaching: AI and Linear Regression for Adaptive Training Load Management  
 (2024) *8th International Conference on I-SHAAC (IoT in Social, Mobile, Analytics and Cloud), I-SHAAC 2024 - Proceedings*

Lalitha, K., Saravanan, T.R., Mohankumar, N.  
 Reinforcement Learning for Patient-Centric Lighting Management System in Healthcare Sector

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## Document details - Virtual Personal Assistant by Using Hand Gesture and Voice Assistant for Disabilities

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCEBS 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCF23GZ7-ART; Code 198193

**Virtual Personal Assistant by Using Hand Gesture and Voice Assistant for Disabilities(Conference Paper)**

Govindarajan, V., Damodharan, S., Mohamad Azeef, M., Kasavan, M., Akash, K., Hori Ganesan, A.

\*Sri Sairam Institute of Technology, Department of Computer Science and Engineering, Tamil Nadu, India  
 \*Sri Valluvar Engineering College, Department of Information Technology, Tamil Nadu, Kattinjallathur, India

**Abstract**

In the 21st century voice assistant usage has increased among people to make ease their work. It helps in several task to overcome our day to day consequences over the user commands. Unfortunately, it does not help people with speech disorder which makes them lack confidence and create social anxiety. So, implementing hand sign recognition over the voice assistant helps differently abled people to overcome their consequences. Implementing hand sign language over virtual assistants there are various measurements of hands has to be recognised since the user may be in early childhood (juvenile), Childhood (juv) stage, Adolescence stage (adolescent), Youth (juvonia), Maturity (VI) Ageing (senior), Old age (senex) or the user may have any genetic disorder like gigantism, dwarf, Down syndrome, Turner syndrome, JM syndrome etc which may

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Volume 11, Issue 6, June 2021, Article number 1681

**Decision Models for Selection of Industrial Robots—A Comprehensive Comparison of Multi-Criteria Decision Making(Article)(Open Access)**

Shanmugasundar, G., Kalita, K., Cep, R., Chohan, J.S.

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 \*Department of Mechanical Engineering, Vei Tech Rengasari Di, Sugunthala RD Institute of Science and Technology, Avadi, 600 062, India  
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**Abstract**

Due to increased demands of production capacity and higher quality requirements, industries are automating at a fast pace. Industrial robots are an important component of the industrial automation ecosystem. However, the selection of appropriate robots is a challenging task due to the sheer number of alternatives present and their varied specifications. The various characteristics or attributes of industrial robots that need due consideration before selection of an optimal robot for a given application are found to be conflicting in nature. Thus, in this paper, several

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Perrilli, M., Lago, F., Gerofalo, S.  
 A critical review and systematic design approach for innovative upper-limb rehabilitation devices

(2025) Robotics and Autonomous Systems

Wang, Z., Nobavi, S.R., Ranaqah, G.F.  
 Multi-Criteria Decision Making in Chemical and Process Engineering: Methods, Progress, and Potential

(2024) Processes

Tran, N.-T., Tzeng, V.-L., Chung, C.-K.  
 An Integrated Approach of Fuzzy AHP-TOPSIS for Multi-Criteria Decision-Making in Industrial Robot Selection

(2024) Processes

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## Document details - Design of fractional order PID and ANN controller for Boeing 747-400 air craft pitch control

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Volume 2790, Issue 1, 24 August 2022, Article number 020020
5th International Conference on Intelligent Computing, ICOnIC 2022, Panimalar Engineering College Chennai, India; 23 March 2022 through 26 March 2022, Code 194793

**Design of fractional order PID and ANN controller for Boeing 747-400 air craft pitch control(Conference Paper)**

Mithu, H., Ellappan, M., Viswanathan, B.

<sup>1</sup>School of Electrical and Computer Engineering, University of Wollongong, Wollongong, Australia  
<sup>2</sup>Electrical and Electronics Engineering, Sri Sairam Institute of Technology, Chennai, India  
<sup>3</sup>Electrical and Electronics Engineering, Aditya Engineering College, Chennai, India

**Abstract**

This is a comparative study of pitch control of Boeing 747-400 in time domain performances. The combinations of disturbance, open loop unstable and nonlinear dynamics are major problems in an aircraft. This paper investigated the control mechanism of pitch angle control of Boeing 747-400 with small disturbance theory linearization methods and Artificial Neural Network (ANN) based non-linear controllers. Fractional Order Proportional Integral Derivative (FOPID) controller has two more parameters as compared with PID. The time domain performance parameters are compared with PID, FOPID and ANN controller for pitch control of air craft Boeing 747-400. The simulation results are presented

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**Chord Craft: Exploring Musical Frontiers with Machine Learning(Conference Paper)**

Arumelina, J., Tholapothurai, S., Dhaseekar, R., Subramanian, P., Vijayaraja, L., Premkumar, R.

<sup>1</sup>Srm Institute of Science and Technology, Department of Cse, Vadapalani Campus, Chennai, 26, India  
<sup>2</sup>Srm Institute of Science and Technology, Department of Mathematics, Vadapalani Campus, Chennai, 26, India  
<sup>3</sup>Sri Sairam Institute of Technology, Dees, Chennai, 44, India

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**Abstract**

The rapid advancement of innovation has sparked significant improvements in the field of music creation, with chord progression being one of the notable areas affected. Many musicians face challenges in playing instruments like the piano by relying solely on auditory perception. Therefore, the need for a chord generator arises to assist them in this endeavor. Mastering music composition demands a substantial investment of time, particularly for novice musicians. To alleviate the time-consuming nature of this task, we explore the practicality of automated chord progression generation by analyzing audio files and converting them into strings. First, the music or audio file will be converted into strings using

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**Enhancing Electric Vehicle Charging Stations with High Efficiency Sic- Based Three-Port Dc/Dc Converters(Conference Paper)**

Shanthi, N., Vignesh, V., Sudharasan, K., Menish, V.  
 Sri Sairam Institute of Technology, Deas, Chennai, India

**Abstract**

This paper introduces an inventive isolated port of three DC/DC converter that melds a series resonant converter (SRC) and a dual active bridge (DAB) converter, with a specific focus on catering to the charging needs of electric vehicle (EV) stations, including both fast and slow charging capabilities. The port configuration of the proposed converter simplifies the component requirements, leading to cost reductions and a more compact system design when compared to traditional charger systems. The control approach is straight forward, employing phase shift and frequency modulation to concurrently regulate the output power of both fast and slow charging ports. Furthermore, an phase shift angle is determined to minimize transformer current when exclusively operating the DAB reactor for slow charging. To validate the converter's performance, a 5-kW SiC-based simulation with an impressive power density of 2.74 kW/dm<sup>3</sup> is tested using a 600 V input voltage, and a 400W

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 2023, Pages 313-316  
 6th International Conference on Recent Trends in Advances Computing, ICRTAC 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category numberCF22933-ART; Code 198391

**The Big Data Analytics and its Effectiveness on Bank Financial Risk Management(Conference Paper)**

Maragan, K., Selvakumar, V., Venkatesh, P., Manikandan, M., Roma, M., Krishnamoorthi, M.  
 \*Sri Sairam Engineering College, Chennai, India  
 \*Sri Sairam Institute of Technology, Chennai, India  
 \*Kristu Jayanti College, Bengaluru, Faculty of Commerce and Management, Bengaluru, India

**Abstract**

The purpose of this study is to gain an understanding of the applications and uses of big data analytics in banking operations as well as the opinions of banking employees regarding the usage of big data analytics to investigate financial crimes. The creation of a great volume of information coming from a variety of channels is a consequence of people being willing to take risks and exchange personal information with one another. This is indicative of the growing plethora of information coming from a multitude of sources, which is a characteristic of the banking industry. The structural questionnaire was employed as a research instrument, and the cross-sectional survey method was used to

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### Innovations in Wearable Radio Frequency Technology: Designing for Connectivity(Conference Paper)

Paromazwan, S., Rajasekar, A., Divya, K., Wagholkar, S., Ashok, P., Soundara Rajan, C.

<sup>1</sup>Sriram Institute of Technology, Department of Electronics and Communication Engineering, Tamilnadu, Chennai, India  
<sup>2</sup>Sriram Institute of Technology, Department of Artificial Intelligence and Data Science, Tamilnadu, Chennai, India  
<sup>3</sup>Prince Shri Venkateshwar Padmavathy Engineering College, Department of Electronics and Communication Engineering, Tamilnadu, Chennai, India

View additional affiliations

**Abstract**

The number of wireless gadgets made to be worn on the body has significantly increased in recent years. This is in part because wearable technology has been intruding on several facets of our lives, thanks to substantial advancements in processing, hardware design, and

**Cited by 2 documents**

Ashok, P., Hollur, G.  
Strategy in Action: Harnessing Cloud Services and Wired Broadband for Seamless Operations

(2024) 2024 2nd World Conference on Communication and Computing, WCCOF 2024

Ashok, P., Hollur, G.  
Wireless Broadband Unleashed: Charting Regulatory Pathways for Broadband Development

(2024) 2024 2nd World Conference on Communication and Computing, WCCOF 2024

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## Document details - IOT Based Optimized Load Scheduling and Automation on Charging EV

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### IOT Based Optimized Load Scheduling and Automation on Charging EV(Conference Paper)

Maheswari, E., Balaji, V., Ezhilrasi, G., Lakshmi, D., Silenthi, R., Gokul, B.

<sup>1</sup>Sri Sai Ram Institute of Technology, Department of Eee, Chennai, India  
<sup>2</sup>MAL-NEPHI College of Engineering and Technology, Department of Electrical Engg., Erode  
<sup>3</sup>Amet Deemed to be University, Department of Eee, Chennai, India

View additional affiliations

**Abstract**

To ensure the safety of vehicles and riders, researchers are still working on accurate monitoring, estimation of State of Charge (SOC), State of Health (SOH), and early detection of rechargeable battery failures in electric cars. The locally optimum scheduling strategy is robust against the dynamic arrival of EVs and scalable to a large EV population. In order to successfully flatten the demand profile of the electric system, an intelligent scheduling technique may be used to schedule EV charging patterns. This will reduce operating costs and potential capital expenditures. An increasingly important stage in the adoption of smart grids is intelligent scheduling for EV charging and discharging. © 2023

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Optimized maximum power point tracking for PV fed hybrid DC-DC converter-based BLDC motor driven electric vehicles

Maheswari, E., Koramkoti, B.N., Rajesh, K., Sharma, S.

Published in Engineering, 2014

4 Citations

Author Position

Check access through your organization to view author position.

Scopus.com/record/display.html?id=2-52,0-85165231346&doi=10.1007/978-11082-023-05154-4&lang=Inward&id=07e1672667051941356804135515df1

Document details - Empowering an IoT platform with advance quantum computing and a Customized deep residual technique

Optical and Quantum Electronics

Volume 55, Issue 10, October 2023, Article number 859

Empowering an IoT platform with advance quantum computing and a Customized deep residual technique(Article)

Ashok, P., Rajagunthar, T., James, T.P.G., Sahayraj, K.K.A., Suganthi, P., Somenudaram, K., Ananthi, S.

Sri Sairam Institute of Technology, Chennai, India

SRM Institute of Science and Technology, Chennai, India

Sri Muthukumarar Institute of Technology, Chennai, India

Abstract

All over the world, millions of devices are wirelessly connected and exchanging data as part of the Internet of Things (IoT). As more and more information is hoped to be monitored by means of a single platform, the importance of accuracy assessment in the pursuit of the perfect IoT platform has grown. To keep up with the ever-increasing data analysis needs for crucial, real-time decision making, IoT data collection is becoming increasingly crucial. In this study, we utilized the "IoT Sensor Data" dataset, consisting of sensor readings collected from various IoT devices. The proposed R-QCNN model, which combines a quantum neural network with a deep residual learning technique, was trained and

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Ntobeni, U., Basu, B., Akwei, H.

Device-Level Energy-Efficient Strategies in Machine-Type Communications: Power, Processing, Sensing, and RF Perspectives

(2024) IEEE Open Journal of the Communications Society

James, T.P.G., Karthikeyan, B.V., Ashok, P.

Strategic Integration of CNN, SVM, and XGBoost for Early-stage Tumor Detection using Hybrid Deep Learning Method

(2023) Proceedings of the 2023 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems, ICISIES 2023

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Polymer Composites

Volume 44, Issue 10, October 2023, Pages 6595-6603

**Effect of hybridization and stacking sequences on mechanical properties and thermal stability of aloe vera-roselle-glass fiber reinforced polymer composites**(Article)

Vijayan, R., Natarajan, L., Palani Kumar, K., Krishnamoorthy, A., Marudanan, K., Ramesh, S. 

<sup>1</sup>Department of Mechanical Engineering, Chennai Institute of Technology, Chennai, India  
<sup>2</sup>Faculty of Engineering, Technology and Built Environment, UCSI University, Kuala Lumpur, Malaysia  
<sup>3</sup>Department of Mechanical Engineering, PSG Institute of Technology and Applied Research, Coimbatore, India

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**Abstract**

Environment friendly polymer composites made of plant based natural fibers such as bamboo fiber, roselle fiber (RF), aloe vera fiber (AF) or kenaf fiber are cardinal of the current world toward sustainability. They offer lower carbon footprint, higher biodegradability, higher specific strength, higher thermal and acoustic characteristics. On the other hand, properties of synthetic glass fibers (GF) such as high specific strength

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Rajendran, V., Selvam, L., Gonopathy, V.  
Finite element analysis on natural fibre (Musa sapientum and Hibiscus sabdariffa) reinforced composite leaf spring

(2024) *AIIP Conference Proceedings*  
Srinivas Perumal, K.P., Selvarajan, L., Sekir, S.M.  
Examining thermogravimetric response and morphological alterations in epoxy composites with hybrid ceramic fillers integration

(2024) *Materials Chemistry and Physics*  
Shanmugam, V., Babu, K., Kannan, G.  
The thermal properties of FDM printed

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## Document details - Comparative study of sintered and composite brake pad for wind turbine applications

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Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology

Volume 237, Issue 7, July 2023, Pages 1430-1445

**Comparative study of sintered and composite brake pad for wind turbine applications**(Article)

Sai Balaji, M.A., Nataraj, J.K., Eelambaram, A., Boskare Sethupathi, P., Kamelakannan, J., Basha, A. 

<sup>1</sup>Department of Mechanical Engineering, BSA Crescent Institute of Science and Technology, Chennai, India  
<sup>2</sup>Department of Mechanical Engineering, SRM Institute of Science and Technology, Chennai, India  
<sup>3</sup>Department of Automobile Engineering, SRM Institute of Science and Technology, Chennai, India

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**Abstract**

The sintered brake pads have been the most commonly utilized brake pads in wind turbines, as it stalls the rotor after shutdown or in case of emergencies. It is a mixture of metallic particles that are pressed together. But it has been noticed that the friction at interface generates the spark in adverse conditions, which cause a fire in nacelle. Due to this a compact unit for fire suppression is used, which adds the additional cost in brake system. Therefore, it is necessary to address the spark issues coming from brake pads under adverse conditions through developing a brake pad using alternate route. Hence, a composite brake button was developed through a compression moulding route, that is, cost economic route. Despite the different compositions and manufacturing routes of materials, a similar frictional behaviour is observed after testing using

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Kannan, K.R., Vignesh, B.V., Govindaraja, M.  
Synergistic Effect of Graphite and Fly Ash on the Microstructural Evolution and Tribological Characteristics of Fe-Cu-Based Wind Turbine Sintered Brake Pad Materials

(2024) *Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science*

Raghunathan, V., Senthymoorthy, G., Arayanan, V.  
Advances in brake friction materials: A comprehensive review of ingredients, processing methods, and performance characteristics

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### IoT Based Vehicle Tracking and Monitoring System Using Smart Application(Conference Paper)

Jebamani, S.A., Devi, D., Saraswathi, V., Ashwarya, N., Rajesh, N., Abdul Kalam, K.U.A.

<sup>1</sup>Sri Sai Ram Engineering College, Department of Information Technology, India  
<sup>2</sup>Sathyabama Institute of Science and Technology, Department of Computer Science, India  
<sup>3</sup>A Engineering College, Department of Computer Science, India

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#### Abstract

Companies like Ola, Uber, and others work in a similar way which is they hire a third-party vehicle and driver in locals of any particular area. These drivers will be connected with the customers who want to avail the taxi service. This makes it easy for the drivers to find their customers faster and also helps people to book any cab at the last minute. This last-minute booking was the one thing that made these applications succeed in their business. Our idea is to enhance their business by getting additional information from the third-party vehicles like petrol level, the heat level of the engines, and also detect accidents that occurred. We need to do this because there are accidents that occur due to driver's negligence. It is the sole duty of the driver to check these things in the car or any vehicle before even starting or getting onto the road but some drivers are not checking their vehicles properly and some vehicles are not even serviced regularly driving those vehicles can create unnecessary problems both to the drivers and customers. This leaves a bad impression on the company that provides his service and affects its reputation. Now to find these parameters in the car that also in real-time we will be using IoT, also called the IoT module or IoT chip is a small electronic device that is embedded on objects or any machine used to send or receive signals when connected to the internet. The IoT chip provides always-on connectivity because it transfers signals in real-time such that there is no need to switch it on every time to use it. These details will then be sent to the application that will be used by Android users. In the application, all the parameters like temperature and voltage will be acquired using sensors like (Voltage sensor ZMPT101B, Temperature Sensor LM35, MEMS sensor ADXL345) and the acquired values will be available. Later this will be integrated into the respective company's application so that the customers can also easily see the vehicle they are traveling to and in case of danger they can warn the driver. © 2023 IEEE.

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### Researching the ESL Classroom: Promoting Critical Thinking and Speaking Skills Through Role-Plays - A Study Among Tertiary Level Learners in the STEM Context Through Action Research(Conference Paper)

Poornima Varalakshmi, K., Yamini, P., Shoba, K.N.

<sup>1</sup>Sri Sai Ram Institute of Technology, Department of English, Chennai, India  
<sup>2</sup>National Institute of Teachers' Training and Research, Department of Education, Chennai, India

#### Abstract

STEM (SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS) education combines Science, Technology, Engineering, and Math [5] help students to become more creative problem solvers. The goal of improving students' speaking skills and critical thinking skills through role play in the

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International Journal of Electrical Engineering and Education  
 Volume 50, Issue 1, (2019), October 2021, Pages 1663-1682

**RETRACTED: Design and development of efficient Luo converters for DC micro grid (International Journal of Electrical Engineering & Education., (2019))(Erratum)**

Sivarajeswari, S., Kirubakaran, D.  
 IEEE, Sri Sai Ram Institute of Technology, Anna University, Chennai, India  
 IEEE, St Joseph's Institute of Technology, Chennai, India

**Abstract**  
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Kavin, K.S., Karavelam, P.S., Kumar, N.  
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 2023 Intelligent Computing and Control for Engineering and Business Systems, ICCCEBS 2023, Chennai, India; 14 December 2023 through 15 December 2023, Category number:CFP23G27-ART, Code 198193

**Automated Feedback System(Conference Paper)**

Devil, V.B., Lakshmi, R.S., Sampath, R., Vinish, S.  
 Sri Sai Ram Institute of Technology, Department of Information Technology, Chennai, India

**Abstract**  
 The use of online applications in our daily lives is a direct result of emerging technologies. These applications had been modified into many situations of our daily activities. Social media platforms have gained widespread popularity due to their interactive nature, allowing users to express their emotions via features like emojis, effectively conveying feelings such as happy or sad feelings. This interaction and feedback level is valuable in many sectors, like restaurants, online shopping, and various other platforms, as it could develop and increase productivity and customer satisfaction. And the implementation of applications like this is often based on cloud, using user-friendly and reliable tools like Microsoft Azure to create resources such as virtual machines, virtual networks, storage, subnets, and load balancing within a resource group. This results in the deployment of Software as a Service (SaaS) applications via the Azure portal or PowerShell. The advantage of cloud deployment is that it removes the need for costly physical equipment and reduces manual labor. This lowers both capital expenditure (Capex) and operational expenditure (Opex). The Mechanism to recognize emotions can be integrated into many types of application domains to modify on-premises operations. An extraordinary benefit is the storage of unstructured data in Azure blobs, which makes the data organization more

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## Document details - Group $\{1, -1, i, -i\}$ cordial labeling in some classes of graphs

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AIP Conference Proceedings
Volume 2790, Issue 1, 24 August 2023, Article number 020066
5th International Conference on Intelligent Computing, ICOnIC 2022, Panimalar Engineering CollegeChennai, India; 25 March 2022 through 26 March 2022, Code 194793

**Group $\{1, -1, i, -i\}$  cordial labeling in some classes of graphs(Conference Paper)**

Radha, J., Venkatesen, V., Vitaldes, K., Perumal, V.

<sup>1</sup>Department of Mathematics, Panimalar Engineering College, Chennai, India  
<sup>2</sup>Department of Mathematics, Sri Sakram Institute of Technology, Chennai, India  
<sup>3</sup>CCE, GIET University, Odisha, Ganapur, India

**Abstract**

Cordial labeling is one of a technique that can be applied in error detection and correction in computer coding. Usually graph vertices and edges are labeled with numbers. But a group cordial labeling is the one that labels vertices and edges using elements in a group. A group is a non-empty collection of elements paired with a binary operation satisfying closure, associative, identity and inverse axioms. Order of an element  $a$  is the smallest positive integer  $n$  such that  $a^n = e$ , where  $e$  is the identity element of the group. An assignment of the elements from the Group $\{1, -1, i, -i\}$  to the vertices of a graph in such a way that an edge  $uv$  is to have label 1 if labels of the end vertices  $u, v$  are relatively prime to each other and label 0 otherwise with an additional condition that number of vertices having with two different labels vary by at most one and total number of edges with labels 0 and 1 vary by at most 1 is called as Group  $\{1, -1, i, -i\}$  cordial labeling. In this paper, we apply the some labeling in the classes of triangular ladder, alternate triangular snake, alternate quadrilateral snake and double triangular snake graphs. © 2023 Author(s).

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**Group $\{1, -1, i, -i\}$  cordial labeling in some classes of graphs(Conference Paper)**

Radha, J., Venkatesen, V., Vitaldes, K., Perumal, V.

<sup>1</sup>Department of Mathematics, Panimalar Engineering College, Chennai, India  
<sup>2</sup>Department of Mathematics, Sri Sakram Institute of Technology, Chennai, India  
<sup>3</sup>CCE, GIET University, Odisha, Ganapur, India

**Abstract**

Cordial labeling is one of a technique that can be applied in error detection and correction in computer coding. Usually graph vertices and edges are labeled with numbers. But a group cordial labeling is the one that labels vertices and edges using elements in a group. A group is a non-empty collection of elements paired with a binary operation satisfying closure, associative, identity and inverse axioms. Order of an element  $a$  is the smallest positive integer  $n$  such that  $a^n = e$ , where  $e$  is the identity element of the group. An assignment of the elements from the Group $\{1, -1, i, -i\}$  to the vertices of a graph in such a way that an edge  $uv$  is to have label 1 if labels of the end vertices  $u, v$  are relatively prime to each other and label 0 otherwise with an additional condition that number of vertices having with two different labels vary by at most one and total number of edges with labels 0 and 1 vary by at most 1 is called as Group  $\{1, -1, i, -i\}$  cordial labeling. In this paper, we apply the some labeling in the classes of triangular ladder, alternate triangular snake, alternate quadrilateral snake and double triangular snake graphs. © 2023 Author(s).

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## Document details - Absorption of echo signal for underwater acoustic signal target system using hybrid of ensemble empirical mode with machine learning techniques

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Multimedia Tools and Applications

Volume 82, Issue 10, December 2023, Pages 47291-47311

**Absorption of echo signal for underwater acoustic signal target system using hybrid of ensemble empirical mode with machine learning techniques(Article)**

Ashok, P., Latha, B.

<sup>1</sup>Department of Computer Science and Engineering, Sri Sai Ram Institute of Technology, Anna University, Chennai, India  
<sup>2</sup>Department of Computer Science and Engineering, Sri Sairam Engineering College, Chennai, India

**Abstract**

Underwater acoustic sensor signal processing relies on sound absorption of underwater acoustic energy. Echo absorption of underwater acoustic waves is a challenging area because of the complexity of a marine ecosystem and the uniqueness of an underwater acoustic route. We developed Improved Weighted Quantum Particle Swarm Optimization-based Ensembles Empirical Mode Decomposition (IWQPSO-EMD), Mean Square Variance (MSV), & Least Mean Squares Algorithm (LMSA) driven echoes absorbing underwater acoustic waves to address the problem. Initially, the original data was divided into Intrinsic Mode Functions (IMF) separated into noise IMFs and actual IMFs. Next, noise IMFs detected the echo

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Ashok, P., Latha, B.  
 Develop on Improved Multi-Frequency Cepstral Coefficients signal processing algorithms for enhancing underwater acoustic signals through wireless network  
 (2023) *Measurement: Journal of the International Measurement Confederation*

Chenalthary, M., Goyel, N., Gupta, D.  
 An oceanographic data collection scheme using hybrid optimization for leakage detection during oil mining in mobility assisted UWSN  
 (2024) *Multimedia Tools and Applications*

Jones, T.R.G., Karthikeyan, B.V., Ashok, P.  
 Strategic Integration of CNN, SVM, and

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## Document details - An Artificial Intelligence Improved Golf Self-Training System using Deep Learning

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**An Artificial Intelligence Improved Golf Self-Training System using Deep Learning(Conference Paper)**

Roopa, D., Preetha, R., Sindevi, S., Senthil, G.A.

<sup>1</sup>Sri Sairam Institute of Technology, Chennai, India  
<sup>2</sup>Vive Institute of Science, Technology and Advanced Studies, Chennai, India  
<sup>3</sup>Agni College of Technology, Chennai, India

**Abstract**

Golf is a sport that requires skill, precision, and mental fortitude. To finish a round of golf with the least number of strokes possible, it is optimal to strike the ball consistently in the direction of the hole. However, without professional direction, reaching this goal is frequently difficult owing to the hurdles that golf brings. To address this, a deep learning model based on Yolov7 - a real-time object detection model and Open Pose was developed in this research to recognize the motions of prior data and deliver suggested feedback. This study aims to enhance golf training by

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Gawrthik, S., Senthil, G.A., Baskiya, G.  
 Future Navigation Demand Trends: Accurate Ride Request Forecasting Optimization Using Machine Learning  
 (2024) *2024 3rd International Conference on Smart Technologies and Systems for Next Generation Computing, ICSTSN 2024*

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2023, Pages 11-16
2nd International Conference on Edge Computing and Applications, ICECA 2023; Namakkal, India: 19 July 2023 through 21 July 2023; Category number:CF238V8-ART; Code 191747

**A Hybrid Cloud Security System using Cryptography(Conference Paper)**

Sathisek, G., Ananth, H., Raju M, R.A., Edalagobbohan, R.B.

<sup>1</sup>Sri Sri Ranganathan Engineering College, Department of Computer Science and Engineering, Tamil Nadu, Coimbatore, India  
<sup>2</sup>School of Computer Science and Engineering, VIT Bhopal University, Mathya Pradesh, Bhopal, India  
<sup>3</sup>Sri Sakom Institute of Technology, Department of Artificial Intelligence and Data Science, Tamil Nadu, Chennai, India

[View additional affiliations](#)

**Abstract**

Information security is a major problem in cloud computing systems as the information may be physically placed anywhere in any data center throughout the networks. Due to the nature of cloud computing, user authentication, information integrity, and confidentiality are all brought up as significant challenges. In order to ensure confidentiality, integrity, and authentications while storing and accessing information from and to the data center as well as in peer contacts, it is advised to adopt a better, innovative, secure security method. Cloud security is a rapidly expanding area of computer and network securities. In the cloud platform paradigm, external data centers are used. It supports a range of programming languages used in the process of deploying web applications. The Cloud is built on a managed containers architecture that integrates information services and robust ecosystems for the deployment and operation of modern apps. In cloud computing, data security is one a major challenge that is dealt with using cryptographic methods. One potential method for encrypting data is the Advanced Encryption

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2nd IEEE International Conference on Advances in Computing, Communication and Applied Informatics, ACCAI 2023, Chennai, India: 29 May 2023 through 30 May 2023; Category number:FOCM23-ART; Code 204746

**Securing Medical Image Transmission using Memetic Algorithm(Conference Paper)**

Thangapalan, L., Dharam, R., Anandhan, K. J.

<sup>1</sup>Sri Sakom Institute of Technology, Computer Science and Engineering, Chennai, India

**Abstract**

In recent times, medical industry faces a great issue in terms of protecting the medical records of people all over the world. In remote areas, in case of severe health issues, they want to consult the doctors in urban areas. The new technology has been introduced in telemedicine where we can send the data through the Internet distributed system. Securing the medical images in the transferring the medical records is an important task to ensure the privacy, confidentiality, integrity, etc. we have to implement techniques that integrating hybrid cryptography. This technique uses as a second layer security in the IoT based distributed systems. In our work, we used "Memetic algorithm", a bio-inspired genetic algorithm. This algorithm is used effectively to encrypt and decrypt the data. This paper proposes a novel approach called "Memetic algorithm" for securing the medical images and enhancing the security and efficiency of Internet of Medical Devices (IoMD). The proposed method involves using memetic algorithms to optimize the key generation process and improve the randomness of the key used for encryption. By incorporating memetic optimization techniques into the cryptographic process, the security of the communication is strengthened, making it more resistant to attacks by unauthorized users. The results of our experiments show the effectiveness of the proposed method, and its potential for improving the security and efficiency of IoMD systems.

**Author keywords:**  
[Cryptography](#) [Memetic algorithm](#) [Genetic algorithm](#) [Encryption](#)

**Indexed keywords:**  
[Memetic algorithm](#) [Cryptography](#) [Genetic algorithm](#) [Security](#) [Encryption](#) [Medical image](#)

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2023 International Conference on System, Computation, Automation and Networking, ICSCAN 2023, Paludcherry, India; 17 November 2023 through 18 November 2023; Category number:CP33(9)90-ART; Code 126895

**A Cost-Effective Navigational Aid for the visually impaired(Conference Paper)**

Karthikeyan, B., Selvi, G.T., Arputhabalan, J., Perishammugam, A., Vignesh, N.  
 From SRM Institute of Technology, Dept of Mechanical Engineering, Chennai, India  
 From SRM Institute of Technology, Dept of Electronics and Communication Engineering, Chennai, India

**Abstract**

Even though technology is improving at an amazing rate, there is still no product on the market that is easy for blind or visually impaired people to use and doesn't cost too much. People who are blind or visually impaired find it hard to do everyday things. If the navigational aid device is linked to the foldable stick, it may help blind or visually impaired people get around and make their job easier. The final product will already have sensors built into it. With these devices, the product will be able to find any nearby objects or people who are trying to get in. Someone will feel a vibration and get a reaction from the device right away if an object or obstacle comes within range of the ultrasonic sensor. This will teach the person in question a lesson. Since the system is small, it is easy to move and set up whenever it is needed. In order to reach this goal, the gadget was designed with a feature that lets the lines roll up when they're not in use. The person who uses the stick will never have any trouble folding it because of this built-in feature. At the very bottom of this thing is a swivel wheel that can be attached to it and turned in any direction - all the way around. Because of the extra benefits, the user doesn't have to lift the stick and tap it on the ground to see what the environment ahead him looks like. Because of this, the amount of work that needs to be done to finish this task is directly decreased. The main goal of this work is to

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Jawin Arputhabalan, J., Balachandran, M., Ananthambal, T.  
 Microcontroller-Based Auto Lock Ignition System For Vehicle Overload Protection

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18th International Conference on Intelligent Computer Technologies, ICTCT 2021, Odipara, Nepal; 26 April 2021 through 28 April 2021; Category number:ICIT(18)481-ART; Code 126892

**An Advanced Intrusion Detection Solution for Networks based on Honeypot Servers(Conference Paper)**

Shree, K., Lakshmi, S., Sreejith, S., Venkatesh, C., Rajalakshmi, D.  
 Department of Computer Science and Engineering, SRM Institute of Science and Technology, Chennai, India  
 Department of Computer Science and Engineering, SRM Institute of Science and Technology, Chennai, India  
 Department of Data Science and Business Systems, SRM Institute of Science and Technology, Chennai, India  
 Department of Engineering and Technology, SRM Institute of Science and Technology, Chennai, India

**Abstract**

Network security is a critical issue in modern technology. Honeypot based intrusion detection methods provide an additional layer of security and enhance network performance by analyzing hacker behavior and detecting unauthorized clients. IP violation and vulnerability detection are used to monitor and prevent access and prevent illegal client activity. An intrusion detection system detects malicious activity through logs. If authorized requests are passed to the server, otherwise, they are directed to honeypot servers. Using honeypot servers, the detection rate is 85.06% with an accuracy of 94.39% and a false alarm rate of 0.035000. © 2021 IEEE.

**Author keywords:**

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Engineering Proceedings
Volume 58, Issue 1, 2023, Article number 112

Multipurpose Smart Shoe for Various Communities †(Article)(Open Access)

Eggenathan, V., Ravikumar, D., Kusala Kumar, G.R., Sockumar, S., Maniuthappan, T., Kasavan, R. ✉

<sup>1</sup>Department of Electrical and Electronics Engineering, Sri Sairam Institute of Technology, Tamilnadi, Chennai, 600044, India  
<sup>2</sup>Department of Computer Science and Engineering, Sri Vankateswara College of Engineering, Tamilnadu, Sripurambudai, 602317, India

Abstract  
 A recent survey depicts that across the globe there are nearly 36 million visually impaired people facing serious issues in accessibility, education, navigating public spaces, safety concerns, and mental health. In recent times, the evolutions of obstacle detectors for blind people have been from people's use of sticks, smart glasses, and smart shoes. Among the above, the major problem faced by all blind people is to walk independently to every place, so to make them feel independent while they walk, here in is a proposal for an intelligent shoe. The proposed intelligent shoe consists of a controller connected with an ultrasonic sensor, voice alert system (VAS), vibration patterns, GPS navigation, connectivity with a smart phone or smart-watch, voice assistance, feedback on gait and posture, and emergency features that are embedded with each other to communicate the presence of obstacles in the directions of the path of the blind. The sensor identifies an obstacle in the direction present then it passes the signal to the controller that activates the VAS and the vibration patterns present in that direction. Therefore, by the proposed concept of vibration sense and VAS with GPS navigation, connectivity with a smart phone or smart-watch means the system provides easy access for the blind to identify obstacles present in their way and help them toward social inclusion. © 2023 by the authors.

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2023 International Conference on System, Computation, Automation and Networking, ICSCAN 2023, 11 November 2023 through 14 November 2023, Category number 9780190140014

Smart Monitoring of DC Power in E-Vehicle and Regenerative Charging Technique (Conference Paper)

Narathala, Jayashankar S., Venkatesh, S., Venkatesh, S., Narasimhan, S., Narendran, J.

<sup>1</sup>SRM Institute of Technology, Department of Electronics and Communication Engineering, Chennai, India  
<sup>2</sup>Anna Maria College of Engineering, Department of Electronics Engineering, Chennai, India  
<sup>3</sup>Anna College of Engineering, Department of Electronics and Communication Engineering, Bangalore, India

Abstract  
 With the passage of the project in the next parameters of electric vehicles, as people become more environmentally aware, electric vehicles are growing in popularity. They have a variety of advantages over conventional gas-powered cars, including fewer emissions and a reduced reliance on fossil fuels. Instead of implementing a prototype investigation of DC parameters, they are rapidly becoming the transportation choice of the future. Electric vehicles feature numerous advantages in the next few years. They are more eco-friendly, reliable, and cost-effective. They are becoming increasingly affordable, which is making electric vehicles more accessible to more people. This project examines the characteristics of battery management systems, their technology, and the benefits and drawbacks of using them in various vehicle applications. This project includes the smart monitoring of power in DC vehicles, state estimation, fault analysis, data acquisition and charging characteristics using MATLAB/Simulink. The performance of the battery is simulated by the vehicle simulation tool. The parameters of electric cars through the battery management analysis. Our project uses Simulink to simulate the program. We built a virtual model in the software for electric vehicle that monitors battery parameters and allows us to see the electric battery which is using solar power to generate and the electric battery can be used and simulated into an app using the primary battery power but also our project focuses on using wireless charging technique for Electric Vehicle that is efficient and affordable. © 2023 IEEE.

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2023 International Conference on Computer Communication and Informatics, ICCCI 2023
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2023 International Conference on Computer Communication and Informatics, ICCCI 2023, Coimbatore, India; 23 January 2023 through 25 January 2023, Category number: CFP2308-ART, Code 184947

**Design of multilevel inverter with its study on different configurations and applications(Conference Paper)**

Vijayaraja, L., Dharmasakar, R., Saradhnan, S.K., Vishal, T., Kannan, V., Kesavan, R.

Sri Sairam Institute of Technology, Department of Electrical and Electronic Engineering, Chennai, India  
 Sri Neelakanteswari College of Engineering, Department of Computer Science and Engineering, Chennai, India

**Abstract**

Electrical device that convert direct current to alternate one termed as inverter. It will be interesting to present an inverter to produce a multilevel output that overcomes the conventional inverters. This made the researchers to introduce new multilevel inverter that can be type of cascading or single unit to produce higher output levels across the load. Here a detailed analysis is made to study the types of MLI that can be made using less number of switches and other components in order to make it compact, so that it will be placed in suitable applications. Study reveals that MLI produces higher level with fewer harmonics that can be placed in electrical applications. Also an attempt is made to design a MLI using

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 The Performance Analysis of 5-Level DC-AC Converter with Level Shifted PWM Technique

(2024) Proceedings of the 3rd IEEE International Conference on Power Electronics, Intelligent Control and Energy Systems, ICPEICES 2024

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2023, Pages 695-699
2nd International Conference on Smart Technologies for Smart Nation, SmartTech-Con 2023; Amity Global Institute Singapore, Singapore; 18 August 2023 through 19 August 2023, Category number: CFP23M04-ART, Code 184786

**Next Generation Air Quality Management using Pollution Detection and Purification Compartment(Conference Paper)**

Mageswari, M., Kiruthika, R., Asha, R.M., Devi, P.

<sup>1</sup>Department of Civil Engineering, Annamalai Engineering College, Tiru Nadu, Chennai, India  
<sup>2</sup>Department of Chemistry, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, India  
<sup>3</sup>Department of Civil Engineering, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, India

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**Abstract**

Air pollution is caused by the presence of the excessive amount of harmful substances that are mixed in the atmospheric air. Air pollution is found as a dangerous substance on the environment that leads to spoil in atmosphere. Pollution in Delhi, particularly during in winter season that crosses almost 40 times the limit given by World Health Organization (WHO). The major particle in air pollution is caused by untreated dust particles which may in turn results in serious health problems. A study states that by collecting the dust from different regions helps us to

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2nd International Conference on Edge Computing and Applications, ICECAA 2023, Narmadapuram, India, 19 July 2023 through 21 July 2023, Category numberCFP23BVB-ART, Code 131717

**IoT based Modern Poultry House with Enhanced Accuracy(Conference Paper)**

Vijayaraja, L., Dhonesekar, R., Premkumar, R., Manish, V., Sudhakararam, K., Kasiwan, R.  
 Sri Sai Ram Institute of Technology, Bees, Chennai, India  
 Sri Venkateswara College of Engineering, Dasa, Chennai, India

**Abstract**  
 The technology exhibits the development of novel systems that enable control and monitoring regardless of distance or time. The internet of things helps people live and work smarter, as well as gain complete control over their lives. In addition to offering smart devices to automate homes, IoT is essential to business. This project demonstrates the IoT solution for monitoring temperature and humidity conditions, as well as the availability of electrical connectivity, independent of time or location. In a poultry house, both temperature and humidity levels should be monitored regularly to ensure the system runs smoothly. The temperature sensor used to sense the temperature of the chicken. The fire sensor will alert the user if any fire accident occurs. Water level is also measured and the water pump motor will be turned on automatically to feed the chicken. Sensors are used in this system to detect weather/environmental parameters such as temperature and humidity. The Arduino microcontroller processes the information read from the sensors. The hardware is implemented successfully at different sites with in the poultry shed. The experimental configuration was discovered to be quite effective. This initiative will benefit both the environment and the poultry business. © 2023 IEEE

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**IoT Based Smart Shopping Cart(Conference Paper)(Open Access)**

Sangeetha, K., Lalithadevi, R., Naviya, M., Harithou Shree, A., Harini, T., Sweetlanshamini, S.  
 Sri Sai Ram Institute of Technology, Department of Ece, Chennai, India

**Abstract**  
 A supermarket is a place with different sorts of products which come under a same roof, by this shopping becomes easy but there are some issues with this type of shopping method that is traditionally every person in the supermarket purchases the product by collecting them all in a trolley. Upon purchase, the billing process takes quite some time and also waiting in long queue will be even worse on festive season and weekends. To overcome these problems, we could incorporate the advancing technology by introducing a smart shopping cart, this method benefits the buyers as well as the shop owners. Each cart has an inbuilt system of a RFID reader to scan the products instead of barcode, an LCD module for displaying product details and cost of total products purchased by the customer. A webpage for generation of a digital copy of the bill has been created by using ESP8266 Wi-Fi module and a power supply for stepping down the voltage and the system to can be implemented by using the Arduino IDE, it is a software tool which we have used for programming. © 2023 IEEE

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCCEBS 2023, Chennai, India; 14 December 2023 through 15 December 2023; Category number:CF28GZ-ART; Code 188298

**Malaria Disease Prediction using Faster RCNN(Conference Paper)**

Mathurpriya, S., Raj Renuka Shree, V., Nihal Tharwat, M.  
 Sri Sai Ram Institute of Technology, Computer Science and Engineering, Chennai, India

**Abstract**

Malaria is a disease caused by Plasmodium parasites that remains a major threat to global health. It affects 200 million people and causes 400,000 deaths each year. The Plasmodium parasite, which is spread through the bites of female Anopheles mosquitoes, is the main cause of malaria. Typically, the use of a microscope in microbiological studies facilitates the identification of infected cells in a blood sample, followed by expert analysis of the results to complete the diagnostic process. This type of expert analysis does not give a completely 100% perfect conclusion and it also costs more. Identifying such targets is also a challenge, largely due to differences in cell shape, density and color, and the ambiguity surrounding certain cell classes. Therefore, a method based on deep learning is used to predict malaria with the highest accuracy. Deep learning-based technologies have proven to be able to achieve human-level accuracy in object detection/classification in image data. These approaches can be used to automate many of the monotonous tasks involved in analyzing micrographs of blood samples. It was Faster R-CNN. The proposed models were trained and tested on a publicly available erythrocyte image dataset containing both infected and uninfected cells. Methods developed to fine-tune the images using image pre-processing successfully identified malarial-infected erythrocytes with the highest accuracy in least period of time. The software is also intended to be used in a hybrid microcomputer to speed up recognition. © 2023 IEEE

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Document details - AI Based Electric Automobile Battery Drain Forecasting System

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2023, Pages 756-761
4th International Conference on Smart Electronics and Communication, ICSEEC 2023, Trichy, India; 20 September 2023 through 22 September 2023; Category number:CF23V90-ART; Code 193543

**AI Based Electric Automobile Battery Drain Forecasting System(Conference Paper)**

Santhosh, B.J., Barathi, S., Arvind, R., Aashiq, V., Manoran, R., Thiruchith, B.S.  
 18gs Institute of Technology, Department of Computer Science and Engineering, Karnataka, Mandya, 571448, India  
 19CNR Institute of Technology, Department of Information Science and Engineering, Karnataka, Bengaluru, 560037, India  
 15ri Sai Ram Institute of Technology, Department of Computer Science and Engineering, Tamil Nadu, Chennai, 600844, India

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**Abstract**

While electric vehicles (EVs) are gaining speed as a sustainable mode of transportation, issues like range anxiety and battery depletion prevent them from being widely adopted. To better plan for charging stops, we created a model that takes into account the time of day, the length of the trip, and the temperature outside. We constructed an accurate battery drain prediction model using machine learning methods, specifically the Support Vector Machine (SVM) algorithm. With strong correlation and low error rates, our findings show that the SVM algorithm is ideal for this job. Our findings might be useful to EV owners and fleet managers as a resource for reducing wasteful driving and maximizing range. Future

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Fareek, S., Thiruvah, B.S., Nagesingachary, K.  
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Shah, F., Mulkhawari, B., Aritha, G.N.

Document details - Placerseries'O - Placement Preparation with Placement Prediction System

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023, Chennai, India; 14 December 2023 through 15 December 2023, Category number/CP29GZP-ART, Code 150199

**Placerseries'O - Placement Preparation with Placement Prediction System(Conference Paper)**

Subba, P., Jayashree, K., Prabavathi, R., Karpalakavalli, S., Geesa, B., Levanja, G.

Sri Sakram Institute of Technology, Department of IT, India

**Abstract**

Nowadays, among students there is an increased inclination towards computer science and the IT industry, which makes them want to learn more about new emerging technologies. But in order to learn those basic technologies, they must be well-versed in the basics of mathematics and coding. Thus, we provide a website with complete guidance for people who are trying to get placed in their dream company, and even working professionals can use this platform to develop their skills in their domain, learn a new skill to make a career shift, or even become freelancers with multiple skills. Students are overloaded with lot of contents on the internet about a company, its interview process, and how to prepare, so we summarize all that information to help people land their desired job. Our website has a detailed system for preparation of the aptitude round, technical round, and HR round, which is customized and different for every IT company, that helps you crack your interview. © 2023 IEEE.

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Document details - Rice Leaf Disease Identification Using Adam Optimizer Based Modified Differential Evolution Algorithm

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2023 3rd International Conference on Ambient Intelligence, Knowledge Informatics and Industrial Electronics, AMBIE 2023, Goa, India; 21 November 2023 through 23 November 2023, Category number/CI2023-480, Code 150207

**Rice Leaf Disease Identification Using Adam Optimizer Based Modified Differential Evolution Algorithm(Conference Paper)**

Vasavanagan, R., Ramani, N., Thirunarayan, P., Ardu, P.S., Akshay, L.S.

MIT Research Associates, Chennai, India

Department of Computer Science and Artificial Intelligence, Sri Lankadevi, Mysore, India

Mysore, India, Chennai, India

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**Abstract**

Recently, one of the grain-based crops that is farmed the most is rice, which is important to the agricultural sector. Furthermore, rice is a significant crop that is cultivated by a great part of the global population. However, biotic and abiotic elements including bacteria, viruses, pests, and fungi can do harm to rice and have an impact on agricultural production. Early disease detection in rice farmers helps in rice crop yield and guards against production loss in rice plants. The rice fields used for cultivation are the source of the rice leaf sheath dataset. The dataset shows the results of the Adam optimizer over three test datasets (light, and leaf) flow. The ultimate goal of the proposed study is to compare and test precision and classification performance. Thus, using a deep learning approach, the study proposed a modified genetic algorithm to carry out efficient classification of rice leaf disease. Moreover, rice leaf disease detection and classification include the use of Transfer learning in conjunction with Inception v3 architecture. The modified differential evolution algorithm (MDE) technique is used to determine transfer learning approach optimal learning rate. Finally, the proposed AI-NDE shows better performance metrics in terms of accuracy (94.5%), precision (94.5%), recall (94.1%), and F1-score (94.1%) respectively. © 2023 IEEE.

Author keywords

Adam optimizer, Deep learning, Modified differential evolution algorithm, Rice leaf disease detection, Transfer learning

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Hou, H., Shi, J.C., Han, H.D.

Deep learning for plant disease detection: a comprehensive review of techniques, challenges, and future directions

2020 Computers and Electronics in Agriculture

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## Document details - Pipeline Climbing Robot for Scaling of Gas Leakage Detection

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2023, Pages 1668-1673
7th International Conference on Intelligent Computing and Control Systems, ICCCIS 2023, Vengal College Engineering (VCE)Madurai, India, 17 May 2023 through 19 May 2023; Category number:978-1-80169-487-4; Code 189854

**Pipeline Climbing Robot for Scaling of Gas Leakage Detection(Conference Paper)**  
Sivrajawari, S., Isha, S.S., Vanitha, K., Bushma, S., Mogandian, G., Haron, B.H.

Sri Sairam Institute of Technology, Department of Electrical and Electronics Engineering, Chennai, India

**Abstract**  
Leakage is the major problem in every pipeline network. All over the world leakage is the main issue on the globe, Pipeline leakage is the primary cause of losses in oil, gas and water. Sometimes harmful gasses leakage in pipelines causes health issues. The pipeline climbing robot for gas leakage will detect the leak and find the location, where the robot will go to the particular location and produce a buzzer sound. A small mobile robot is designed to identify the gas leakage in the pipeline. The mobile robot moves automatically when it senses the leakage of gas in the pipeline. A buzzer keeps ringing till the user identifies the problem. This pipeline climbing robot identifies the leaks in the pipeline like harmful gases that cannot be reached by humans in that situation. This pipeline climbing robot plays a major role in detecting gas leakage in any condition. © 2023 IEEE.

**Author keywords**  
AI, ICM, Microcontroller, Gas Leaks, Pipe, Crawling Robot, Sensors

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Document details - Swachh Surveillance Drobot Using Deep Neural Networks

2023 Intelligent Computing and Control for Engineering and Business Systems, ICCCEBS 2023

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCCEBS 2023, Chennai, India, 14 December 2023 through 15 December 2023; Category number:IC23GGZ-ARR; Code 498299

Swachh Surveillance Drobot Using Deep Neural Networks(Conference Paper)

Gopinathan, S., Kaarthi, U., Megha, P., Malhotra, B.

Sri Saram Institute of Technology, Department of Artificial Intelligence and Data Science, West Tambaram, Chennai, 44, India

Abstract

The suggested approach employs a deep neural network to recognize garbage and locate it precisely and autonomously. A unique navigation method is also suggested to guide the robot's progress using ground segmentation using a deep neural network. Thanks to the waste levels and automatic navigation features, the robotic arm can quickly and accurately pick up trash from the floor in locations like parks or schools thanks to the waste levels and automatic navigation features. According to research results, the accuracy of garbage recognition can reach up to 95%, and even without route planning, the navigation approach can achieve virtually the same clearing performance as traditional techniques. Therefore, the proposed robot can be an invaluable aid in reducing physical labour for tasks related to rubbish collection. © 2023 IEEE.

Author keywords

Computer Vision, Feature Learning, Waste Detection and Classification, YOLO V4

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Document details - Broadband Wireless Network Era in Wireless Communication - Routing Theory and Practices

Modeling and Optimization of Optical Communication Networks

1-jeyaraj.p@iitg.ac.in

Broadband Wireless Network Era in Wireless Communication - Routing Theory and Practices (Book Chapter)

Hees, S., Grewel, G.A., Langewitz, G.C.A., Legrand, G., Rapp, G.

For: Sri Saram Institute of Technology, Chennai, Tamil Nadu, India

Major College of Technology, Chennai, India

Major Institute of Ocean & Technology, Chennai, India

Abstract

Wireless technologies that enable people to link their home networks together as well as to the Internet via wireless community networks are high demand despite the fact that many network architectures for local Broad wireless networking have been studied and implemented in previous days to emerging technologies and devices. Broadband Wireless Networking (BWN) has experienced a boom in the recent wireless applications that has demonstrated strong performance in various roles. Indeed, allowing such broadband networking and creating a group network has numerous advantages. The goal of this book is to describe the need and current commercial quality of BWN, digital resource, and collaboration. The usage of efficient communication is a difficult problem for the next generation BWN performance in managing real time and QoS sensitive applications as well as providing both service providers and consumers with the same. Today's cutting-edge routing methods in many are not ideally suited to tackle this task, as these standards are fundamentally complex and suffer from various problems with regard to efficient communication-based applications according to the literature. As a result, the aim of this chapter is to provide BWN with an implementation roadmap of essential related to their use in a range of various efficient routing mechanisms. © 2023 Springer Publishing LLC.

Author keywords

Broadband Wireless Networking, Broadband Wireless Network, Optical Broadband Network

Chapters in this book

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Broadband Design for WDM Networks: A Study of Connected Cases for Communication

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2023 Innovations in Power and Advanced Computing Technologies, I-PACT 2023, Universiti Malaysia Kuala Lumpur, Malaysia, 8 December 2023 through 10 December 2023; Category number:CF2K30-ART; Code 197662

**Electric Power Generation-A New Scenario Using Biodiesel(Conference Paper)**

Gowri, V.G., Selvi, T.G., Narayanan, S.S.V., Malyarasi, K., Kothiraj, K.  
<sup>1</sup>Dept. of Electrical and Electronics Engineering, K.S.Rangasamy College of Technology, Tiruchengode, India  
<sup>2</sup>Dept. of Electronics and Communication Engineering, Sri Sai Ram Institute of Technology, Chennai, India

**Abstract**

Energy is a dynamic factor in commercial aspects of any country and one of the basic factors that describe the quality of life. Country's energy security would remain susceptible until alternate fuels to substitute/supplement petroleum based fuels are developed based on indigenously produced renewable feedstocks. The most important objective of the paper is to use biodiesel as a resolution for the existing energy crisis and to evaluate the performance of the diesel power generator which was operated. Biodiesel are environment friendly fuels and their utilization would significantly contribute about reduction of carbon emissions. The biodiesel defined in this paper was produced by the simplest process called transesterification with neem oil as a source. The transesterification was processed with methanol as solvent and potassium hydroxide as catalyst. The properties of biodiesel are similar to that of petroleum diesel. The performance of the diesel generator is articulated using the characteristic graphs. The characteristics of the generator in terms of voltage, frequency, and power for different speeds are revealed. It's noticeable that carbon and sulphur emissions are reduced. © 2023 IEEE.

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Document details - IoT-Based Sleep Apnea Monitoring for Timely Detection and Prevention

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2023, Pages 1363-1368
2023 International Conference on Self Sustainable Artificial Intelligence Systems, ICSSAS 2023; M.D. Nachimuthu, M.Jeganathan Engineering CollegeRode, India, 18 October 2023 through 20 October 2023; Category number:CF22DNT-ART; Code 194676

**IoT-Based Sleep Apnea Monitoring for Timely Detection and Prevention(Conference Paper)**

Dhonesekar, R., Vijayaraja, L., Divya, A., Keerthana, P., Thalapathinji, S., Venkatesh, V.  
<sup>1</sup>Sri Sakram Institute of Technology, Department of Electrical and Electronics Engineering, Chennai, India  
<sup>2</sup>Sri Institute of Science and Technology, Department of Mathematics, Chennai, India  
<sup>3</sup>Rajalaxmi Engineering College, Department of Electrical and Electronics Engineering, Chennai, India

**Abstract**

Sleep disorders are common in a significant part of the entire population with diseases of the central nervous system, continuous monitoring of respiration during sleep has an important role in early diagnosis and treatment. It introduces the most comfortable way to monitor sleep apnea disorder using a wearable smartwatch and monitor it using the application based on IoT. A possibly lethal condition known as sleep apnea disorder causes frequent airflow stalls or stops when a person is asleep. PSG (Polysomnography) is a challenging procedure that requires the patient to undergo relatively intrusive test methods performed in a clinic, restricting the patient's movement and leading to a change in sleep pattern. © 2023 IEEE.

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Document details - Breast Cancer Classification using Fine Needle Aspiration Test with Graphical Neural Networks in Deep Learning

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 2023 Intelligent Computing and Control for Engineering and Business Systems, ICCES 2023; Chennai, India; 14 December 2023 through 15 December 2023; Category number:ICCP2023-ART; Code 198193

**Breast Cancer Classification using Fine Needle Aspiration Test with Graphical Neural Networks in Deep Learning(Conference Paper)**

Domeheran, S., Govindarajan, V., Jeeritha, K., Christina Jaya, S., Desigireja, K., Krupa, T.A.  
 Srim Vallabham Engineering College, Department of Information Technology, Tiru Nadu, Kottangulicher, India  
 Sri Sairam Institute of Technology, Department of Computer Science Engineering, Tiru Nadu, Chennai, India

**Abstract**  
 As per the statistics given by World Health Organization (WHO), in the list of reasons for women mortality, breast cancer holds the sixth place. Women in India also suffer from Breast cancer in a huge amount. Breast cancer is basically the breast affected by carcinogenic cells. This can be of two types - Benign and Malignant. Benign denotes the non-spreadable cells whereas malignant cells are widely spreadable and cause several other cancers. The early the detection the easier the cure. In order to predict cancer in early stage with high accuracy, it requires the help of technology. The main role of technology here is to predict the cancerous cells in much accurate way. Here comes the use of machine learning and deep learning. Using several neural networks, we can predict the outcomes in which each neural network performs with different accuracy levels for some data. This paper shows the detection of breast cancer type by taking the Fine Needle Aspiration (FNA) test data as input and uses the modified neural network (FNA) to predict the type of cancer cells with higher accuracy than Conventional Neural Network (CNN). © 2023 IEEE.

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Document details - Recent Advances, Challenges, and Applications of Deep Learning in Healthcare Systems for Medical Diagnosis and Treatment

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**Recent Advances, Challenges, and Applications of Deep Learning in Healthcare Systems for Medical Diagnosis and Treatment(Conference Paper)**

Mani, M., Saritha, A., Rajaganesan, S.A., Muthukrishnan, A., Arshad, S.  
 School of Allied Medical Sciences, Lady's Professional Institute, India  
 Computer Science, Sri Sairam Institute of Technology, India  
 Sri College of Technology, Department of Electronics & Communication Engineering, Bengal, India  
 Sri Vallabham Engineering College

**Abstract**  
 In the realm of healthcare, the integration of Deep Learning (DL) stands as a potent force, propelling advancements in medical diagnosis and treatment. This paper navigates recent state-of-the-art, pertinent hurdles, and emerging applications within the sphere, encompassing a detailed analysis, demonstrating neural networks' role in data analysis. Progressing further, we unveil DL's robust applications in medical diagnosis, particularly in convolutional neural networks, enhancing image-based disease detection. The discussion also delves into challenges, encompassing data privacy concerns and model interpretability. In tandem, we explore personalized medicine by predicting disease trajectories and optimizing drug discovery. Exploring bioinformatics, DL revolutionizes healthcare management through precision agriculture and digital records. In conclusion, the synthesis of DL and healthcare signifies a transformative trajectory, paving the way for advanced diagnosis and personalized treatments, though not devoid of ethical and technical intricacies. © 2023 IEEE.

**Author keywords:**  
 Convolutional neural networks, Deep Learning, Healthcare, Disease trajectory prediction, Drug discovery, Next-generation medicine, Health data privacy, Personalized medicine, Predictive analytics, Model interpretability, Precision medicine

**Indexed keywords:**

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**Efficient Re-clustering with Novel Fuzzy Based Grey Wolf Optimization for Hotspot Issue Mitigation and Network Lifetime Enhancement(Article)**

Preetha, M., Prabhu, R., Devioleni, M., Selvi, V.T.

<sup>1</sup>Department of Computer Science and Engineering, Prince Sri Venkateswara Padmavathi Engineering College, Chennai, India  
<sup>2</sup>Department of Electronics and Communication Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
<sup>3</sup>Department of Electronics and Communication Engineering, PSNA College of Engineering and Technology, Dindigul, India

[View additional affiliations](#)

**Abstract**

The study intends to employ Pre-deterministic Key Distribution (PKD) approach to choose a route that comprises of high verification on nodes. The research executes to improve Load Balancing (LB) upon numerous participating nodes in network through the usage of Dynamic Energy-aware Routing (DER). Finally, the study aims to extend lifetime of WSN using proposed novel Fuzzy based Grey Wolf Optimization (FUZZY-GWO) which is an appropriate re-clustering method that resolves the hotspot issue. Subsequently, key distribution is implemented on the basis of Producers Traffic Rate (PTR). Subsequently, sensor selection strategy is done. In the course of time, re-clustering is executed by using proposed novel FUZZY-GWO. The proposed system is evaluated by comparing it with various well-established methods with respect to metrics like average residual

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Jayanthi, G., Deepthi, P., Res, B.N.  
 A Comparative Study on Machine Learning and Fuzzy Logic-Based Approach for Enhancing Credit Card Fraud Detection  
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Ramesh, T.R., Jockilin, T., Kumar, R.A.  
 Machine Learning-Based Intrusion Detection: A Comparative Analysis among Outlets and Innovative Feature Reduction for Enhanced Cybersecurity  
 (2024) International Journal of Intelligent Systems and Applications in Engineering

Deepthi, P., Selvakumar, S., Subashini, T.  
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10th International Conference on Intelligent Sustainable Systems, ICSS 2023, 19-20 Dec 2023, Sri Lanka, Sri Lanka, 19-20 Dec 2023

**An IoT-Enabled Smart Network Traffic Signal Assistant System for Emergency Vehicles Using Computer Vision(Conference Paper)**

Neethi, A.A., Prabhu, R., Sugandhi, K., Indira, K., Akash, G.

<sup>1</sup>Department of Information Technology, Anna College of Technology, Chennai, India  
<sup>2</sup>Department of Electronics and Communication Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
<sup>3</sup>Department of Artificial Intelligence and Data Science, Sri Sai Ram Institute of Technology, Chennai, India

[View additional affiliations](#)

**Abstract**

The increase in vehicles on the road causes an increase in traffic accidents, which makes it difficult in clearing the path for emergency vehicles such as ambulances, rescue fire engines and emergency vehicles. To avoid difficulty in traffic signal for the emergency situations, an IoT sensor smart based system is developed that identifies the arrival of an ambulance to the hotspot through the signals received from the ambulance and manages the signals accordingly. The regulation of the signals based on the location of the ambulance opens the way for the ambulance and reduce the time to reach the destination. This can be achieved via device that recognizes commercial signal placed on the hotspots, as a smart network traffic signal (SN-TS) assists and assists the vehicle and performs formulations to regulate traffic before the traffic signal. Machine learning algorithm is implemented to develop the model for the detection of the ambulance through the signals received. Communications between SN-TS and each smart algorithm employed via its sensors, efficiency and an associated outcome for the system. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Author keywords**

Computer Vision, Smart Traffic Signal, IoT, Emergency Vehicle, Computer Vision, Smart Traffic Signal, IoT, Emergency Vehicle, Computer Vision, Smart Traffic Signal, IoT, Emergency Vehicle

**Indexed keywords**

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Geetha, S.A., Lakshmi, Indira, S.K., Geetha, S.  
 Enhanced AI-Based Smart Assistant Detection for Multi-Wireless Device Using Deep Learning with Improved Computer Vision  
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Document details - Energy Efficient Clustering for Equating the Load in Wireless Sensor Network

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**Energy Efficient Clustering for Equating the Load in Wireless Sensor Network(Conference Paper)**

Korhko, O.K., Sivam, H., Venkatesh, H., Sathya, A. &

For Sai Rangandha Engineering College, Department of Information Technology, Tamil Nadu, Coimbatore, India  
 \*Nevada Institute of Medical and Health Sciences, Nevada School of Engineering, Department of Electronics and Communication Engineering, Tamil Nadu, Chennai, India  
 \*Sree Siddhanta College of Engineering and Technology, Department of Electronics and Communication Engineering, Tamil Nadu, Salem, India

**Abstract**

Wireless Sensor Network (WSN) contains numerous sensor nodes and energy management is a major significant problem in WSNs. To solve this issue energy efficient clustering for equating the load (energy) is proposed. The objective of this work is to improve the quality of service and enhance energy efficiency. This step and double clustering is employed wherein the clustered nodes are grouped using the energy algorithm. The multi-level clustering strategy is proposed in the novel process. Single-hop communication is used for cluster setting but communication is through a network Multiple Access (OMA) time slot. Applying network coding, Cluster Head (CH) node has communication is effectively managed. Performance, Queue Priority Indicator (QPI) and an Geographic Priority Index (GPI) are also studied to know the optimal forwarding mode as well as cluster management issue. The algorithm is applied for equating the load and energy utilization. The idea, approach has been analyzed and covered by applying the network simulator NS-2, and the outcome has improved the efficiency of the OPI issues and load balance. [View full text](#)

**Author keywords**

Energy efficient clustering, Network coding, Multi-level double clustering, Network simulation

**Indexed keywords**

Energy efficient clustering, Network coding, Multi-level double clustering, Network simulation

Document details - An Experimental Analysis Based on Automated Detection of Polycystic Ovary Syndrome on Ultrasound Image using Deep Learning Models

2022 1st International Conference on Advances in Electrical, Electronics and Computational Intelligence (IAEEECI 2022)

1st International Conference on Advances in Electrical, Electronics and Computational Intelligence, 16-18 Dec 2022, Mace Technological Institute, October 2022 through 20 October 2022. Category number: 10.1109/97816003558247.2023.10370811&origin=inward&txid=76c37d07f667cd35026206f7d5a6...

**An Experimental Analysis Based on Automated Detection of Polycystic Ovary Syndrome on Ultrasound Image using Deep Learning Models(Conference Paper)**

Abhishek, M., Sangeetha, S., Muthukumar, A., Sathya, A., Anitha, S. &

\*V.J.S Engineering College, Department of AI, Chennai, India  
 \*Vedant Vaidya Dr. Rangarajan Dr. Saranya Engineering College, Department of Information Technology, Chennai, India  
 \*Narasimha Institute of Technology, Department of Information Technology, Chennai, India

**Abstract**

Reproductive health issues in women of reproductive age, such as PCOS, are a major contributor to female infertility. Acute, menstrual irregularities, excess hair growth, and obesity are all indicators of polycystic ovary syndrome. In order to control the symptoms and assess the health risks associated with this, a good diagnosis is crucial. Misdiagnosis can lead to the diagnosis regarding there include a high androgen hormone level, irregular or absent, and a ultrasound finding of polycystic ovaries (PCO). One of the difficult PCOS diagnostic criteria is the diagnosis of PCOS using ovarian ultrasonography that is time-consuming, costly, and subject to human error. In order to detect and categorize PCOS, the accuracy of the diagnosis and the determination of their prevalence in the process. Along with attending to the patient's symptoms, their doctor also need to look for biochemical and clinical indicators of PCOS in order to make a diagnosis. To address this, we have developed a deep learning model to assist their doctor's use. In order to detect polycystic ovarian from ultrasound pictures (ultrasound images), we created a hybrid Deep Learning model consisting of an Ensemble Deep Learning Model and a LightGBM. The suggested model achieved an accuracy of 93.73% on test pictures, whereas the suggested method achieved an accuracy of 94.1%. The model's effectiveness was proven by comparing the results on a number of quantitative effectiveness measurement metrics. © 2022 IEEE.

**Author keywords**

Deep learning, LightGBM, Ensemble model, Ultrasound image

**Indexed keywords**

Deep learning, LightGBM, Ensemble model, Ultrasound image

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## Document details - Sustainable Smart Homes Using IoT for Future Smart Cities

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2023, Pages 266-269
4th International Conference on Smart Electronics and Communication, ICOSEC 2023; Trichy, India; 20 September 2023 through 22 September 2023; Category numberCF92V90-ART; Code 193643

**Sustainable Smart Homes Using IoT for Future Smart Cities(Conference Paper)**

Vijayaraja, L., Jayakumar, M.S., Dhonasekar, R., Manikha, M.R., Vignesh, V., Kavayen, R.  
Sri Saram Institute of Technology, Chennai, India

**Abstract**  
In recent days, Home Automation System (HAS) plays vital role because of the fast and advanced technology makes the day to day life of an end user much convenient. This home automation will be more helpful to people those with disabilities, infants and elderly populations. The main objective of the proposed IoT-based home automation is to automate the functioning of appliances of households through Wi-Fi devices. By using smart-phones all the objects of households that are connected through the IoT network can be controlled by the applications based on cloud computing algorithm. The proposed design helps to empower the households to manage and control the appliances that are located anywhere in the world. Using Internet of Things (IoT) integrated with the computer, web services and cross-platform mobile services, the proposed concept is designed. This paper mainly describes various interconnection systems of mechanism, mainly sensors to enable multiple home automation and implementations. © 2023 IEEE

**Author keywords**

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Mid Zhi, U.  
Machine Learning and Python for Human Behavior, Emotion, and Health Status Analysis  
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## Document details - Extended Kalman Filter Algorithm to Detect False Data Injection in Wireless Sensor Network

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2023, Pages 1447-1461
2nd International Conference on Augmented Intelligence and Sustainable Systems, ICAISS 2023; CARE College of Engineering Trichy, India; 28 August 2023 through 30 August 2023; Category numberCF93CB3-ART; Code 140825

**Extended Kalman Filter Algorithm to Detect False Data Injection in Wireless Sensor Network(Conference Paper)**

Bebuti, R., Ganesan, J.J., Latha, D., Karthikeyan, H., Kalai Selvi, D.M.  
\*Rmk Engineering College, Department of Electronics and Communication Engineering, Tamil Nadu, Chennai, India  
\*Sri Saram Institute of Technology, Department of Artificial Intelligence and Data Science, Tamil Nadu, Chennai, India  
\*Rmk College of Engineering and Technology, Department of Computer Science and Engineering, Tamil Nadu, Chennai, India

**Abstract**  
Wireless Sensor Networks (WSN) contains spatially distributed sensor nodes that collaborate with each other. However, the WSN is susceptible since the wireless medium is unpredictable. Several conventional approaches are used to distinguish the abnormal in the WSN, and all have difficulties. An Extended Kalman Filter Algorithm (EKFA) to detect false inject data in WSN is presented in this paper. It addresses two issues such as abnormality recognition and obstacle detection. It also distinguishes false insert data. Particularly, it observes node behaviors and then makes EKFA to forecast their future states. The node behaviors is observed by incorporating abnormal node experiment and system.

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Document details - High Speed FPGA Assisted IoT Development for Smart PV Grid Monitoring System

2022 International Conference on Energy, Materials and Communication Engineering, ICEMCE 2022

High Speed FPGA Assisted IoT Development for Smart PV Grid Monitoring System (Conference Paper)

Jagadeesh Kumar, M., Vikram Kumar, A., Sujatha, H., Anirudh Babu, A., Shreeprasad, S., Anandharaman, S.

For the last decade of technology, Department of Electrical and Electronics Engineering, Anna Engineering Technological University, Department of Electrical and Electronics Engineering, Pulichatthi, India

Abstract

The Internet of Things (IoT) is the ability to link people and things with sensors and software, anytime, anywhere, over any network, and via any service. The Smart Grid (SG) is the greatest significant IoT application. Due to this development, the SG has billions of distributed energy resources, the presence of distributed energy resources in the grid is not programmable, so it is very difficult to support for the distribution of IoT-based Smart PV grid monitoring System. This paper provides a unique model system and software for monitoring the high-speed power grid in order to detect any fault. Smart grid is associated with technologies it is possible to store solar energy in the smart system. The system is applied in this paper and it increases DC/DC voltage from 12V to 24V in a simple building, high current, battery, high temperature, and it is possible to monitor, both the PV system and the power grid are connected in the Smart Grid system. Additionally, a comparative analysis is done in this work, and the voltage gain of the system is maintained at 100.000.

Author keywords

Engineering keywords

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Document details - Development of a Compact IoT-Enabled Device to Monitor Air Pollution for Environmental Sustainability

Engineering Proceedings

Development of a Compact IoT-Enabled Device to Monitor Air Pollution for Environmental Sustainability (Article) (Open Access)

Jagadeesh, V., Venkatesh, D., Ganesh, V., Karan, S. M., Vikram, K. A.

Department of Electrical and Electronics Engineering, Sri Sarvam Institute of Technology, Tirunelveli, Chennai, 610044, India

Department of Computer Science and Engineering, Sri Venkateswara College of Engineering, Tirunelveli, Tirunelveli, 610022, India

Abstract

Monitoring air quality is a matter of common knowledge, and monitoring air quality helps us keep an eye on air pollution in growing global cities with visible impact on public health and the environment. The need for effective and real-time monitoring systems has become increasingly apparent to combat this growing concern. With an increasing air pollution surveillance system (APSS) in the form of sensors of things (IoT) technology to make comprehensive and dynamic air quality measurement is required. The proposed APSS employs a network of IoT-enabled sensors strategically distributed across urban and industrial areas. These sensors are equipped to measure various pollutants, including particulate matter (PM2.5 and PM10), nitrogen dioxide (NO2), sulfur dioxide (SO2), carbon monoxide (CO), and volatile organic compounds (VOCs). Here, a regression model is created to forecast air quality using sensor data while taking into account variables including weather conditions, traffic patterns, and industrial activities. Air quality categories such as good, moderate, and unhealthy are classified using machine learning algorithms based on real-time data. The IoT architecture facilitates seamless data transmission from these sensors to a centralized cloud-based platform. The developed APSS monitors the air quality using an IoT-based sensor and the database cloud server with some unique features. An alarm will trigger when the air quality goes below certain limit. Also, the air quality, which is tracked and recorded on real-time (RTM), is tracked on the cloud server to help the users when the APSS goes beyond a certain limit, an alert message is sent to the user via a central board, which takes preventive measures to control the pollution and also alerts the people, which helps each person to take action in their own interest from pollution and have a good air quality environment. Additionally, the APSS offers user-friendly interface, accessible through web and mobile applications, to empower citizens with real-time air quality information. The effectiveness of the proposed air pollution monitoring system has been validated through successful field trials in urban and industrial environments, and it has the ability to provide real-time observations and empower stakeholders in promoting environmental sustainability and fostering citizen engagement. © 2023 by the authors.

Author keywords

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Document details - Cluster-Based Data Mining for Graphical Information Retrieval

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 International conference on technological advancements in computational science, ICTACS 2023, 11th-13th January 2023, Category number: 978-973-0-4580-4

**Cluster-Based Data Mining for Graphical Information Retrieval(Conference Paper)**  
 Jagadeesh Kumar, M., Jayashree, S., Saravanan, S., Saranya, G.  
 Nageswari University, Coimbatore Department, Salem, India  
 Nageswari Academy of Research and Education, Department of Computer Science and Engineering, Tamil Nadu, India  
 Nageswari Engineering College, Salem, India  
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**Abstract**  
 This paper investigates the application of cluster-based data mining techniques in enhancing the efficiency and accuracy of graphical information retrieval. In the contemporary digital age, the exponential growth of graphical data necessitates efficient, scalable, and precise retrieval methods. Our research addresses the pressing challenge by implementing a novel, cluster-based data mining strategy that integrates user behavior and metadata. This approach is designed for rapid information extraction, utilizing an advanced fusion of graphical information, an embedded cutting-edge algorithms and statistical tools to analyze, categorize, and retrieve pertinent data efficiently. The results indicate a significant improvement in retrieval precision, data processing speed, and user experience, thus enhancing the adaptability of the cluster-based approach across diverse data volumes and types, marking a pivotal advancement in graphical information retrieval. The strategic insights from this study not only contribute to the theoretical discourse but also hold practical implications for professional applications, particularly for professionals and organizations reliant on swift and accurate graphical information access. This paper serves as a comprehensive guide for future research aimed at optimizing and expanding the applications of cluster-based data mining in information retrieval and beyond. © 2023 IEEE.

**Author keywords**  
 Cluster-based data mining, Graphical information retrieval, Retrieval efficiency, Graphical information

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**Retail Business Convenience Segmentation using Clustering and Data Visualization(Conference Paper)**  
 Thirunavukarasu, J., Senjanas, J., Sivarajkumar, M., Yuvashree, R.  
 Sri Sai Ram Institute of Technology, Computer Science and Engineering, Chennai, India

**Abstract**  
 The conventional approach to launching a business is to research and gather data regarding the past performance of rival businesses unless they were profitable or unsuccessful. Innovation is the ethos of the modern day, as everyone is engaged in a struggle to outperform one another. The objective of our suggested research is to create knowledge that will be helpful to assisting business owners and small companies that are losing money. Our main aim is to assist small-scale manufacturers in becoming successful marketers. In return for the dataset, which must be provided as input, we will provide them with clear instructions on how to start a profitable business and recover from their loss. In order to analyze data more effectively, our planned work will segment clients based on stock input, weekly updates of stocks sold, and waste products. In this work, two different clustering techniques (k-Means and hierarchical) are used to classify the products into subsets, and their respective results are compared. Data will be segmented using clustering algorithms, allowing for more informed resolution of the final result. © 2023 IEEE.

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 James, T.R.G., Kartikeyan, B.Y., Ashok, P.  
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 (2023) Proceedings of the 2023 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems, ICISEE 2023  
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Document details - Visual-Inertial Mapping, Localization and Planning for Autonomous Mobile Robots

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCCEBS 2023

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCCEBS 2023, Chennai, India, 14 December 2023 through 15 December 2023. Category number: ICF22GZP-ART; Code: 493193

Visual-Inertial Mapping, Localization and Planning for Autonomous Mobile Robots (Conference Paper)

Hemanth Kumar, C.S., Aditya Gurjale, S.

Sri Sastham Institute of Technology, Artificial Intelligence, Chennai, India

Abstract

Navigation has long been used to determine one's position, location, and path to an object. It provides precise information on the location of a certain place or object. Though there have been several changes and improvements to navigation, there have also been rumors of making it autonomous. This indicates that navigation occurs automatically and without human assistance. The device will understand where it's going and how to get there. Visual odometry (VO) is a key term in this context. It calculates the relative positions of two picture pairs. Similarly, the mobile robot's location is studied. However, there is an issue here. Noise rise (drift error) causes VO to worsen with time. To address this, the Inertial Measurement Unit (IMU) was invented. The IMU consists of accelerometers, gyroscopes, and magnetometers. These produce more accurate findings and aid in noise reduction. The IMU and VO are coupled to generate Visual Inertial Odometry (VIO). An Extended Kalman Filter (EKF) is used to integrate the VIO and GPS for more accurate localization on a local and global scale. Stereo disparity estimation enhances a depth

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An Effective Automated Framework for Oral Cancer Detection by Enhanced Convolutional Neural Networks (Conference Paper)

Geetha, R., Jagadeesh, M., Manikandan, J.

Department of Engineering College, The Institute of Computer Science and Engineering, Chennai, India

Faculty of Engineering and Technology, Sri Sastham Institute of Technology, Palur, India

Sri Sastham Institute of Technology, Department of Information Technology, Chennai, India

Abstract

Oral cancer, an aggressive form of cancer affecting the mouth and throat, has been an alarming worldwide issue due to its late detection and limited, often invasive, treatment options. Challenges such as high recurrence rates, delayed diagnosis, and complex treatment plans add to the prognosis and outcomes. Early detection is crucial for improving prognosis and survival prospects. Machine learning techniques have gained prominence in enhancing cancer diagnosis, while deep learning models, in particular, have shown promise in detecting oral cancer, providing highly accurate classification rates over traditional approaches. In this study, we are currently employing a deep learning approach. To this end, we have developed an enhanced framework incorporating feature extraction, preprocessing, and classification. Custom Layered Adaptive Histogram Equalization (CLAHE) used for effective pre-processing enhances the contrast, making the detection and classification. In the first step of pre-processing while Gray Level Co-occurrence Matrix analysis statistical measure based features. Finally, modified convolutional neural network was employed for accurate classification of oral cancer cases. Utilizing Kaggle Repository dataset, we used it to assess the performance of our framework, while comparing it against other high-performance methods. Our proposed framework has an accuracy rating of 99.9% which surpasses all other state-of-the-art approaches.

Author keywords

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Wahid, C., Samra, M. Enhancing Oral Cancer Diagnosis Using Deep Learning in a Real-World CT Scan

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Wahid, C., Samra, M., Madhavan, A.A. A Study on Multimodal Approach for Early Detection of Dermatology Using Deep Learning

2024 Proceedings of ICWT 2024: 2024 International Conference on Intelligent Systems, Technology and Entrepreneurship

Parthasarathy, V., Mahesh, T., Hiteshan, S. Optimizing Biomedical Image Segmentation Using Deep Learning: A Novel Hybrid Approach for Improved Diagnostic Accuracy in Medical Imaging Systems

2024 Proceedings of the 20th International Conference on Intelligent Computing, Data Science and Engineering Conference 2024

Document details - IoT-Oriented Gesture Automation with Mesh Detection through OpenCV and Pyfirmata Protocol using ResNet-Mediapipe

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2022 In *Journal of Power and Advanced Computing Technologies*, 1 (PACT) 2022

2022 In *Journal of Power and Advanced Computing Technologies*, 1 (PACT) 2022, November 2022 through December 2022, Category: [Journal Papers](#) - [View details](#)

**IoT-Oriented Gesture Automation with Mesh Detection through OpenCV and Pyfirmata Protocol using ResNet-Mediapipe (Conference Paper)**

Muradli, M., Sanyal, S., Jagtha, R., Mishra, S., Mishra, S., ...

\*Auto University, Department of Information Technology, Sri Sairam Institute of Technology, India  
 \*Department of Information Technology, Sri Sairam Institute of Technology, India

**Abstract**

In this paper, we introduce a hybrid gesture automation model and an IoT control system tailored for practical use, enabling the conversion of hand movements into electrical signals for home appliance control, while allowing for workflow assistance to gesture-based automation with mesh detection through OpenCV for object detection and recognition, a pyfirmata protocol, and a pyfirmata protocol. We successfully integrate a work the pyfirmata protocol and Mediapipe to boost recognition speed and precision. Results are formulated as an algorithm, tested by accuracy levels with processed data from hand gestures. Our experiments indicate that neural networks effectively recognize hand gestures in diverse scenarios, even within confined spaces. Operating within a pre-trained domain model, it attains real-time gesture recognition with occasional latency, exceeding 94.9%, and a remarkable recognition speed of up to 10 FPS, outperforming alternative gesture recognition. Our model achieves extended IoT system capabilities with essential features comparable to those of the Arduino Uno R3 microcontroller. Mediapipe bridges the local mobile device controller to the server, and the OpenCV for object detection, which also plays a pivotal role in its operation. Our system not only enhances gesture recognition powered by neural networks but also effectively manages a multitude of IoT devices. It boasts the benefits of low power consumption, accuracy, and hardware needs, relative to hand gesture control, and seamless integration into home-computer interaction control with wireless IoT. © 2022 IEEE.

**Author keywords**

IoT-Oriented Gesture Automation, Pyfirmata, OpenCV, ResNet-Mediapipe

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Document details - Ensemble Approach for Optimizing Variable Rigidity Joints in Robotic Manipulators Using MOALO-MODA

**Info**

2022 In *International Conference on Intelligent Computing and Applications*, 15 (ICICA) 2022, April 2022 through June 2022, Code: 344229

**Ensemble Approach for Optimizing Variable Rigidity Joints in Robotic Manipulators Using MOALO-MODA (Conference Paper)**

Murugesan, S., Mishra, S., Chakrabarti, S., Mishra, S., ...

\*Department of Instrumental Engineering, Sri Sairam Institute of Technology, Chennai, India  
 \*Department of Aerospace Engineering and Applied Mechanics, Indian Institute of Engineering Science and Technology, Shilpacharya  
 \*Department of Mechanical Engineering and University Center for Research and Development, Chaitanya Charitable Society, Mysore, India

**Abstract**

A novel ensemble-based optimization technique is proposed for designing a robot manipulator variable stiffness joint. A multi-objective optimization is performed by considering the maximization of generated torque and the minimization of the weight of the joints. The optimization considers three design parameters (i.e., inner outer width, outer rotor width, and spring length) to increase torque and reduce weight. Multi-objective and non-dominated MOALO and multi-objective differential evolution (MODE) optimization techniques are employed to generate Pareto fronts. These Pareto fronts are clustered and condensed using non-dominated sorting genetic algorithm (NSGA-II) and MOALO is referred to as MOALO-MODA. The authors under authors keywords: Instrumental Engineering, Robotics, Optimization, Variable Rigidity Joints, MOALO, and MODA.

**Author keywords**

MOALO, MOALO-MODA, Instrumental Engineering, Robotics, Optimization, Variable Rigidity Joints, MOALO, and MODA

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Document details - Monitoring of Photovoltaic Fed Induction Motor Control using IoT

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Proceedings of the 2nd International Conference on Edge Computing and Applications, ICECA 2023

2nd International Conference on Edge Computing and Applications, ICECA 2023, November 16-17, 2023, Category number: 978-1-6654-1111-1, Code 1421344

**Monitoring of Photovoltaic Fed Induction Motor Control using IoT (Conference Paper)**

Harshika, M., Anuragha, K., Anbu Jayanthi, S.G., varidassubramanian, S.

For Sri Jagadgurur Engineering College, Department of Electrical and Electronics Engineering, Tirupur, Coimbatore, India  
 \*Datta School of Business and Technology, Department of Electrical and Electronics Engineering, Tirupur, Coimbatore, India  
 \*Narasimha Institute of Technology, Department of Electronics, Tirupur, Coimbatore, India

**Abstract**

Renewable energy fed motor drives are becoming popular in recent years, and solar photovoltaic (PV) is chosen as the source because of its efficient economic benefits and clean nature. Since the majority of the electricity supplied to the utility grid is an alternating current (AC) supply, AC to AC inverter induction motor (IM) are employed in both industrial and household equipment. Faults are identified related to the IM's speed control problems, among many the control schemes, oriented to implementation in the paper using the genetic search path with multi-swarm (GSPM) technique and the motor parameters are monitored by the internet of things (IoT). Owing to the use of non-invasive techniques, voltage source inverter (VSI) fed the generator pulsed torque. The output voltage of the inverter technique is chosen as a successful and a performance parameter. The IM control design is implemented in MATLAB Simulink. The IoT platform is included in this system for analyzing and collecting the data periodically. The generated data may be kept on a cloud platform and accessed using web page. The benefits of the system are better safety and it stores data for preventive maintenance. © 2023 IEEE.

**Author keywords**

Genetic search, Internet of things, Multi-swarm, Non-invasive, Online monitoring, Online optimization, Pulse width modulation

**Indexed keywords**

Engineering computer

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Demirel, M.G., Uzunoz, A.B., Akpinar, S.A.  
 \*Department of Energy Systems and Energy Conversion, Faculty of Engineering, Department of Electrical and Electronics Engineering, Istanbul Kültür University, Istanbul, Turkey

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**Digital I Will Using Blockchain (Conference Paper)**

Joshi, S., Anuragha, K., Nandhan, L.M., Sharmila, R.

Sri Sai Ram Institute of Technology, Dept of Information Technology, Chennai, India

**Abstract**

Digital wills are legal documents that outline an individual's wishes for the distribution of their digital assets after their death. With the emergence of blockchain technology, it is now possible to create and store digital wills in a secure and decentralized manner. Decentralized blockchain technology provides a tamper-proof and immutable ledger that ensures the digital will remains secure and unchanged over time. This helps to guarantee that the individual's wishes for the distribution of their digital assets are carried out as intended, without the need for intermediaries or centralized authorities. The use of smart contracts, which are self-executing contracts that are written directly into lines of code, can help to automate the execution of digital wills. This can help to simplify the process for loved ones left behind and reduce the need for intermediaries. The use of decentralized blockchain technology for digital wills has the potential to revolutionize end-of-life planning by providing a secure and transparent method for ensuring that an individual's wishes are carried out as intended. Despite the challenges, the benefits of using blockchain technology for digital wills are significant, and this approach may become increasingly popular as blockchain technology continues to evolve. © 2023 IEEE.

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2023 International Conference on Sustainable Computing and Smart Systems, ICS3S 2023, Hindustan College of Engineering and Technology (H CET), Computer Conference Radio, 30 June 2023 through 01 July 2023, Category number:ICP3S-ART, Code 189244

**Human-Computer Interface Challenges in Mobile Data Mining(Conference Paper)**

Indrakumar, K., Sathya, A., Jeyaraj, K., Kadir, K.A., J.

They are a research scholar, assistant professor of computer science and engineering, and an assistant professor in the Sri Sairam Institute of Technology, Department of Artificial Intelligence and Data Science, Tamil Nadu, Chennai, India. They are an engineering college, department of electronics and communication engineering, Tamil Nadu, Chennai, India.

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**Abstract**

The continuous advancement of computer software, hardware, and artificial intelligence has allowed for numerous projects in the development of human-machine communication systems in recent years. The development of such methods provides more accurate results than humans. The use of the human-computer interface in the Natural Language Understanding (NLU) component of the human-computer interaction (HCI) and the time it takes to complete tasks are both directly affected by the results of this natural language comprehension. In this research study, a neural network and FCM-based engine is developed for understanding and interacting with natural language. Data from the appropriate literature is used to complete the necessary understanding of NLU. Next, the interactive engine is used to develop a model of HCI based on natural language search engine using a neural network, and also the model's underlying neural network reasoning structure is revealed.

**Author keywords**

Communication interface, Human Machine, Intelligent Interface, Natural Language, Natural Language Processing

**Indexed keywords**

Engineering conference, Human-machine, Human-computer interaction, Natural language, Software

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8th IEEE International Conference on Science, Technology, Engineering and Mathematics, ICONSTEM 2023, Chennai, India, 6 April 2023 through 07 April 2023; Category number:ICP3S-ART, Code 189244

**Water Quality Monitoring System Using IoT(Conference Paper)**

Saritha, G., Jithendra, R., Saravanan, T., Soja Sudarshana, R.A., Sowmya, S., J.

Sri Sairam Institute of Technology, Department of Electronics and Communication, Chennai, India  
 New Prince Shri Bhawan College of Engineering and Technology, Department of Electronics and Communication Engineering, Chennai, India

**Abstract**

In recent years, the problem of water contamination has gotten worse. One of the main factors influencing health and the severity of the disease may be enjoying the water with family members and animals. The main sources of drinking water are lakes and streams, which are highly dependent on the quality of the water. This Internet-of-things-based mechanism for determining water quality seeks to ascertain water quality. Water temperature, pH, and turbidity are a few examples of parameters that may be monitored using sensors. The core controller is capable of processing sensor-measured information. One option is to use the Arduino model as the main controller. This research demonstrates the use of the Internet of Things (IoT) on the Thing Speak cloud for real-time monitoring of temperature, turbidity, and pH. © 2023 IEEE.

**Author keywords**

Cloud-based, Weather Condition Monitoring System using ESP3286 and Amazon Web Services

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Mohamed, A., Gunasegaram, G., Hariri, D.  
 Cloud-based Weather Condition Monitoring System using ESP3286 and Amazon Web Services  
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**SPYBOT: Unmanned Surveillance Using IoT(Conference Paper)**  
 Rajasekar, A., Rajaprasad, S., Mothiah Sai, S.  
 Sri Sai Ram Institute of Technology, Department of Artificial Intelligence and Data Science, Chennai, India

**Abstract**  
 The concept of an unmanned spybot, controllable remotely via a web-based interface and capable of streaming surveillance data over a WiFi network, showcases advancements in robotics and communication technologies. While it may have practical applications in military and security fields, several complex issues must be addressed. Privacy concerns loom large, as covert surveillance in public or private spaces can infringe upon individual rights and raise ethical questions. Legal implications also come into play, as the deployment of such technology must comply with jurisdiction-specific laws and regulations. Security vulnerabilities pose a significant risk, potentially enabling malicious actors to hijack the spybot or intercept sensitive data. The technical challenges of creating a reliable and secure system for remote control and data streaming cannot be understated, demanding rigorous testing and safeguards. Regulatory approval, safety considerations, and adherence to data protection laws are crucial elements of responsible development and deployment. Moreover, accountability for the actions of the spybot and the handling of collected data must be clearly defined. Building public trust through transparency and collaboration with experts in law, ethics, and cybersecurity is essential for responsible innovation. Balancing technological progress with ethical, legal, and security considerations is paramount when pursuing projects of this nature. © 2023 IEEE.

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**Retail Business Convenience Segmentation using Clustering and Data Visualization(Conference Paper)**  
 Thirunavukarasu, J., Sarganasa, J., Sivakrishna, M., Yuvashree, R.

Sri Sai Ram Institute of Technology, Computer Science and Engineering, Chennai, India

**Abstract**  
 The conventional approach to launching a business is to research and gather data regarding the past performance of rival businesses unless they were profitable or unsuccessful. Innovation is the ethos of the modern day, as everyone is engaged in a struggle to outperform one another. The objective of our suggested research is to create knowledge that will be helpful to aspiring business owners and small companies that are losing money. Our main aim is to assist small-scale manufacturers in becoming successful marketers. In return for the dataset, which must be provided as input, we will provide them with clear instructions on how to start a profitable business and recover from their loss. In order to analyse data more effectively, our planned work will segment clients based on stock input, weekly updates of stocks sold, and waste products. In this work, two different clustering techniques (k-Means and hierarchical) are used to classify the products into subsets, and their respective results are compared. Data will be segmented using clustering algorithms, allowing for much more focused production of the final result. ©

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Document details - A Hybrid Approach for Detecting and Preventing Security Attacks in MANETs

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International Conference on Self-Sustainable Artificial Intelligence Systems, ICSSAS 2023 - Proceedings  
2023, Pages 1154-1160

2023 International Conference on Self-Sustainable Artificial Intelligence Systems, ICSSAS 2023; MF; Nachimuthu, M.; Jaganathan Engineering College/Eds; India; 18 October 2023 through 20 October 2023; Category number:CF22DNT-ART; Code:194070

**A Hybrid Approach for Detecting and Preventing Security Attacks in MANETs(Conference Paper)**  
Rajalalshmi, D., Immaculate, P.S., Mazhumitha, D., Saravanan, D., Rajeswari, S., Pandi, S.S.

For Sri Ram Institute of Technology, Computer Science and Engineering, Chennai, India  
For Sri Ram Institute of Technology, Master of Business Administration, Chennai, India  
\*Pavandar Bharathi/Edsaran College of Engineering & Technology, Computer Science and Engineering, Tiruchy, India

View additional affiliations

**ABSTRACT**  
MANETs are new sort of organizational network that works in a profoundly powerful and unusual atmospheres. Though the flexible nature of MANET is attractive, the dynamic topology of MANETs brings in numerous threats. The existing Intrusion Detection Systems (IDS) doesn't strictly detect the generation of attacks namely Black Hole, Gray Hole, Worm Hole and additional routing attacks. Added to it, the traditional methods of protection techniques won't be sufficient as MANETs are capable of forwarding network even in the absence of fixed infrastructure. In this proposed system introduces a new technique to detect these attacks and also prevent the generation of attacks by using Black Hole, Gray Hole,

**Cited by 4 documents**

Deepak Kumar, K., Saravanan Gokul, G., Anandhi, S.  
Unravelling Network Attacks with Machine Learning and Explainable AI

[2024] 2nd IEEE International Conference on Advances in Information Technology, ICAT 2024 - Proceedings  
Benedict, J.N., Kinn, V.S., Nivetha, G.R.  
A Novel Multi-Factor Geopical Authentication Scheme for Enhanced Digital Security

[2024] 2024 International Conference on Computational Intelligence for Green and Sustainable Technologies, ICCISST 2024 - Proceedings  
Benedict, J.N., Proveen, J., Somesh Kumar, S.  
Android Threat Detection Using Deep Learning

Document details - Novel molecular hybrid geometric-harmonic-Zagreb degree based descriptors and their efficacy in QSPR studies of polycyclic aromatic hydrocarbons

1 of 1

SAE and QM in Environmental Research  
Volume 54, Issue 7, 2021, Pages 585-589

**Novel molecular hybrid geometric-harmonic-Zagreb degree based descriptors and their efficacy in QSPR studies of polycyclic aromatic hydrocarbons(Article)**  
Anandharam, M., Paul, D., Chinnel, J., Raju, V., Prabh, K., Mahalingam, K. J.

\*Department of Mathematics, Loyola College, Chennai, India  
\*Department of Mathematics, Sri Ram Institute of Technology, Chennai, India  
\*Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology, Vellore, India

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**UPDATE NOTICE**  
Correction to: Novel molecular hybrid geometric-harmonic-Zagreb degree based descriptors and their efficacy in QSPR studies of polycyclic aromatic hydrocarbons (SAE and QM in Environmental Research, 2021, 54, 7, (585-589))  
DOI: 10.1080/1062936X.2023.2239149

**ABSTRACT**  
The physicochemical characteristics of polycyclic aromatic compounds critical to environmental modeling such as octanol/water coefficients, solubility, bioactivity, polarity and several other are dependent on their underlying molecular structure. Proposing the development of mathematical models to predict such characteristics by which experimental results are difficult to obtain, we propose twelve novel descriptors derived from geometric, harmonic and Zagreb degree based descriptors and then study the effectiveness of these descriptors in QSPR. On comparing the predicted hydrocarbon environmental properties, our computer analysis shows that the proposed descriptors have a good linear correlation and prediction power when compared to the topological and distance type descriptors. We have also derived the QSPR equations for four properties of a large series of polycyclic aromatic hydrocarbons originating from surrounding countries and show their scaling factor

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Mahalingam, K.J., Paul, D., Anandharam, M.  
Mathematical modeling and QSPR analysis of physico-chemical properties of polycyclic aromatic hydrocarbons: an innovative approach

[2022] Hohen  
Lopez, L., Vello, M.V., Ramos, L.P.  
Topological prediction models for calculating the n-octanol/water partitioning coefficient range of polycyclic aromatic hydrocarbons, applications to carbon nanotubes

[2024] Scientific Reports  
Mishra, S., Mishra, S., Mishra, S., Mishra, S.  
Distance based topological descriptors, graph-theoretical properties, and Hückel patterns of benzenoid ring embedded in n-phenyl surface in an exposure

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2023, Paper 613-618
40th International Symposium on Automation and Robotics in Construction, ISARC 2023, IIT Madras Chennai, India, 5 July 2023 through 7 July 2023, Code 192370

Automatic Design of various Reinforced Concrete Structures based on AutoCAD AutoLISP(Conference Paper)

Dhoran, V.R., Yeluri, R.

<sup>1</sup>Department of Civil Engineering, The Gujarat College of Engineering, Madurai, India  
<sup>2</sup>Department of Electronics and Communication Engineering, Sri Sai Ram Institute of Technology, Chennai, India

**Abstract**

The objective of this paper is to develop different automatic designs for building construction using a new tool called AutoCAD AutoLISP. One-way slab, Reinforced Cement Concrete pipe, straight stairs spanning horizontally, Circular tank over the ground and a Square Column Footing. These are the designs developed using AutoLISP software. Five Library functions are developed to get the 3D model for these designs. After getting the input parameters from the user, the required design structures will be generated automatically. The advantage of this tool is that since this library is created, the input of drawings in the structural analysis will be easy, it will shorten the design period compared to other software. Developing all types of slabs, stairs and tanks using this software will be more beneficial to improve the design efficiency and quality. © ISARC 2023. All rights reserved.

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International Conference on Self-Adaptive Artificial Intelligence Systems, ISAAC 2023, Proceedings
2023, pp. 1-6
2023 International Conference on Self-Adaptive Artificial Intelligence Systems, ISAAC 2023, Madurai, India, 20 October 2023 through 24 October 2023, Category Number 10232149, Code 10232149

An IoT Enabled Smart Home Automation Using Augmented Reality in Computer Vision(Conference Paper)

Neelakanta, S., Sathya, S., Sathya, S., Sathya, S., Sathya, S.

<sup>1</sup>Apex College of Technology, Department of Information Technology, Chennai, India  
<sup>2</sup>Sri Sai Ram Institute of Technology, Department of Computer Science and Engineering, Chennai, India  
<sup>3</sup>Sri Sathya Sai Institute of Technology, Department of Civil Engineering, Chennai, India

**Abstract**

Home Automation (HA) is the process of using technology to automate the various systems and appliances within a home. This technology has been growing rapidly in the past few years, allowing for greater convenience, efficiency, and safety within a household. In recent years, the introduction of Augmented Reality (AR) and Internet of Things (IoT) technology enabled the development of even more innovative home automation solutions. This research focuses on the integration of the advanced technology of Augmented Reality (AR) and IoT. The paper discusses the hardware and components that enable AR and IoT to be used for home automation. Next, the paper explores the potential applications of AR and IoT in home automation, such as home security, energy efficiency, and convenience. Furthermore, the paper identifies the challenges and opportunities associated with the use of AR and IoT in home automation. Finally, the paper provides some recommendations and proposals for further research. Overall, this paper demonstrates that the use of AR and IoT in home automation has the potential to revolutionize the way people live within their homes. The combination of AR and IoT in home automation allows for more efficient and secure living, such as monitoring the home through AR-enabled devices to ensure an enhanced and personalized security through AR. The integration of AR and IoT in home automation is transforming the way people live and work, making homes smarter, more efficient, and safer. This research work has proposed and implemented an IoT module to control home appliances using AR applications with the help of smart devices. © 2023 IEEE.

**Author keywords**

Augmented Reality (AR) | Internet of Things (IoT) | Home Automation | Smart Home | Computer Vision

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Document details - Indoor Navigation Using Ultra Wide Band

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2023 Intelligent Computing and Control for Engineering and Business Systems, ICCESBS 2023, Chennai, India, 14 December 2023 through 15 December 2023; Category number:CI2862-ART; Code 188298

**Indoor Navigation Using Ultra Wide Band(Conference Paper)**  
 Divya, B., Veeramakali, T., Ravathi, S., Harisharajan, R.R., Adithyaban, D., Eshwaran, G.V.  
 Sri Sai Ram Institute of Technology, Dept of Computer Science and Engineering, India  
 School of Computing, Sri Institute of Science and Technology, Dept of Data Science and Business Systems, Tamilnadu, Kattankulathur, India

**Abstract**  
 Indoor positioning is a significant and intriguing topic in navigation systems that present numerous use cases for investigation. Researchers are exploring technologies capable of providing accurate locations in indoor spaces where GNSS positioning systems are ineffective. In the numerous solutions available for indoor location services, Ultra-wideband (UWB) technology was chosen for its ability to provide high-precision positioning information for multiple points in real-time. This paper presents a UWB indoor positioning system that utilizes time of flight (ToF) algorithm. At first, time difference of arrival (TDOA) algorithm compute range measurements, this facilitates the trilateration (TA) plane position algorithm's location determination. UWB technology was chosen because it is the latest technology available on Android 12 and further also offers high accuracy, resistance to interference and minimal signal reflection from walls. UltraWide Band(UWB) localization encounters various obstacles, such as multipath distortions, additional signal delays, time discrepancies in clocks, signal interference, and the computational resources necessary to determine the user's location. © 2023 IEEE.

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**Indoor Navigation Using Ultra Wide Band(Conference Paper)**  
 Divya, B., Veeramakali, T., Ravathi, S., Harisharajan, R.R., Adithyaban, D., Eshwaran, G.V.  
 Sri Sai Ram Institute of Technology, Dept of Computer Science and Engineering, India  
 School of Computing, Sri Institute of Science and Technology, Dept of Data Science and Business Systems, Tamilnadu, Kattankulathur, India

**Abstract**  
 Indoor positioning is a significant and intriguing topic in navigation systems that present numerous use cases for investigation. Researchers are exploring technologies capable of providing accurate locations in indoor spaces where GNSS positioning systems are ineffective. In the numerous solutions available for indoor location services, Ultra-wideband (UWB) technology was chosen for its ability to provide high-precision positioning information for multiple points in real-time. This paper presents a UWB indoor positioning system that utilizes time of flight (ToF) algorithm. At first, time difference of arrival (TDOA) algorithm compute range measurements, this facilitates the trilateration (TA) plane position algorithm's location determination. UWB technology was chosen because it is the latest technology available on Android 12 and further also offers high accuracy, resistance to interference and minimal signal reflection from walls. UltraWide Band(UWB) localization encounters various obstacles, such as multipath distortions, additional signal delays, time discrepancies in clocks, signal interference, and the computational resources necessary to determine the user's location. © 2023 IEEE.

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Document details - A Novel Non-Volatile SRAM with Reduced Read Delay

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2023 IEEE International Conference on Next Generation Electronics, NEXE 2023, Vellore, India: 24 December 2023 through 26 December 2023; Category number: CPP23UD6-ART; Code 197901

**A Novel Non-Volatile SRAM with Reduced Read Delay(Conference Paper)**

Bajuri, V., Umashethi, N., Valarmathy, G., Suganthi, S.M.

<sup>1</sup>Jyethishmath Institute of Technology and Science, Department of Electronics and Communication, TS, Kamnagar, India  
<sup>2</sup>Sri Sakram Engineering College, Department of ESE (IoT), TN, Chennai, India  
<sup>3</sup>Sri Sai Ram Institute of Technology, Department of AI & DS, TN, Chennai, India

**Abstract**

Static Random Access Memories (SRAMs) are well known for their ability to operate at high speeds. However, their performance is constrained by their volatility. Any standard SRAM can be altered into a non-volatile SRAM by placing a non-volatile memory (NVM) device within the cell. In this paper, we present a new non-volatile SRAM that was designed and simulated in LTSpice using the 22nm Predictive Technology Model (PTM) from Arizona State University. Our proposed circuit not only demonstrates improved read delay but also boasts low power consumption. We evaluated various parameters of the proposed circuit, including non-volatility, static noise margin (SNM), and read and write delay. © 2023 IEEE.

**Author keywords**

LTSpice non-volatile NVRAM SRAM

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Document details - Hybrid Electric Vehicle Charging Station under Critical Voltage Conditions

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Proceedings of the International Conference on Circuit Power and Computing Technologies, ICCPCT 2023
2023, Pages 1115-1123
2023 International Conference on Circuit Power and Computing Technologies, ICCPCT 2023, Kollam, India: 10 August 2023 through 11 August 2023; Category number: CPP23IPT-ART; Code 192822

**Hybrid Electric Vehicle Charging Station under Critical Voltage Conditions(Conference Paper)**

Kuruseelan, S., Lalitha, D., Saravanan, R., Theemochi, L., Suganyadevi, M.V.

<sup>1</sup>Nallara Institute of Technology, Electrical Engineering, Chennai, India  
<sup>2</sup>AMET University, Electrical and Electronics Engineering, Chennai, India  
<sup>3</sup>CARE College of Engineering, Electrical and Electronics Engineering, Tiruchirappalli, India

**Abstract**

The popularity of electric vehicles is quickly spreading throughout the globe. Over the years, their innovations have generally evolved. However, their charging system continues to be of interest because an oil conditioning network recently met most of the requirements for charging electric vehicles. In any event, research over the course of the year has focused on how to use limitless energies in the charging station. The greater part of the examination studies center around the administration, ideal control, charging plans and charging procedures. There is no exploration done on a charging station that joins the framework incorporated half-brided renewable energy framework, for example, Wind and PV including a fuel battery save money with a distributed energy exchanging model. The objective of this exploration is to support a highly

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Document details - Artificial Neural Network Based Selection Method for Antenna Parameters in Microwave Application

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2022 Intelligent Computing and Control for Engineering and Business Systems, ICCICEE 2022, December 2022, Category Number: 978-973-98601-2033-104459099, Inward ID: 2344f69df3a81f559c0c4f08f297d97

**Artificial Neural Network Based Selection Method for Antenna Parameters in Microwave Application (Conference Paper)**

Radha, K., Sankar, S., Sankaranarayanan, V., Sankaranarayanan, S., Sankar, S.

Department of Technology, Department of Electronics and Communication Engineering, Chennai, India  
 High Calibre Institute of Technology, Department of Information Technology, Chennai, India  
 Nanopower Institute of Technology (Nanopower Institute), Department of Computer Science and Engineering, Chennai, India

**Abstract**

The usage of machine learning in the field of microwave engineering has increased. This paper proposes a deep neural network model to address parameter optimization of a 2-D square patch antenna using Artificial Neural Network (ANN) Technique. An artificial neural network was trained to generate an array of antenna parameters in the form of the model in a high width of the square patch and range of antenna parameter values, the output is a parameter, VSWR. This was made a perfect choice for communication systems engineers due to its low weight, low cost. The ANN model was used to calculate the neural network cost function. The proposed model reference was used and got the best result for the parameters. Then with the help of a machine learning algorithm, the antenna parameters of the patch antenna were designed and optimized. The substrate called FR4 used. It has a 2x2 square patch antenna structure was synthesized, designed, and developed. © 2022 IEEE

**Author keywords**

Antenna, Artificial Neural Network (ANN), Deep Learning, Machine Learning, Microwave

**Indexed keywords**

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Genithi, S., Leventi, S.A., Stavou, G.  
 Fullen Navigation Directed Traffic Accurate Risk Analysis Assessing Operational-Voting Machine Learning  
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Document details - Detecting Insider Threats in Cybersecurity Using Machine Learning and Deep Learning Techniques

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2022 International Conference on Communications, Security and Artificial Intelligence, ICCSAI 2022

2022 International Conference on Communications, Security and Artificial Intelligence, ICCSAI 2022, November 2022, Category Number: 978-973-98601-2033-10421133, Inward ID: c094ac0a6e1b04e2449f21468b6f6e...

**Detecting Insider Threats in Cybersecurity Using Machine Learning and Deep Learning Techniques (Conference Paper)**

Radha, K., Sankar, S., Sankaranarayanan, V., Sankaranarayanan, S., Sankar, S.

Department of Technology, Chennai, Computer and Communication Engineering, India  
 High Calibre Institute of Technology, Chennai, Computer and Communication Engineering, India  
 Nanopower Institute of Technology, Chennai, Department of Computer Science, India

**Abstract**

The subject of cybersecurity is making a significant impact on one of the challenges that organizations face is keeping up with the ever-evolving nature of threat posed by their own employees. This risk, which comes from insiders or staff inside the organization, usually gets by the normal security resources. This is due to the fact that these individuals are trusted fully. This research presents a comprehensive approach to the identification of insider threats by making use of machine learning and deep learning methodologies. We propose a hybrid model that combines deep neural networks, which are able to capture fine-grained behavioral activities, with feature engineering and pattern-based and evidence of anomalous insider behaviors. This model would be used to identify anomalous insider behaviors, that resulted a detection accuracy of 96.2%, which was higher than the existing state-of-the-art approaches, and it surpassed them by using a dataset that was created from real-world events and system logs and multiple different categories. In addition, the deep learning component made it feasible to identify various patterns of potential dangerous behaviors that had previously escaped detection. When traditional machine learning techniques are coupled with deep learning methods, as shown by our findings, it may be possible to develop insider threat detection technologies that are more effective, responsible, and secure within the area of cybersecurity. © 2022 IEEE

**Author keywords**

Deep Learning, Machine Learning, Insider Threats, Machine Learning

**Indexed keywords**

**Cited by 2 documents**

Ames, L., Khan, A., Gupta, J.  
 AI-Driven Threat Mitigation of the Edge: Leveraging Machine Learning for Real-Time Threat Detection and Response  
 2024 2nd IEEE International Conference on Cyber Security and Network Security, ICNSNS 2024  
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Radha, K., Sankar, S., Sankaranarayanan, V., Sankaranarayanan, S., Sankar, S.  
 Identification of Insider Threats Using Facial Authentication via Inception V3 as Web-Cam-Based Method  
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## Document details - Vehicle Density and Emergency Vehicle Detection for Smart Traffic Control

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2023, Pages 542-549
3rd International Conference on Technological Advancements in Computational Sciences, ICTACS 2023, Amity University Tashkent Campus Tashkent, Uzbekistan, 1 November 2023 through 3 November 2023, Category number CFP23CPS-ART, Code 396391

**Vehicle Density and Emergency Vehicle Detection for Smart Traffic Control (Conference Paper)**

Vignash, L., Samej, S., Bhuvanavari, S., Saravanan, L., Saritha, G.

Arjun College of Technology, Eca, Coimbatore, India  
 Papp Engineering College, Chennai, India  
 New Prince Shri Bhawan College, India

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**Abstract**

The aim of this research paper is to propose a novel approach for managing vehicle density in urban areas through the detection of emergency vehicles. The suggested system employs sophisticated computer vision methodologies to analyze real-time traffic data and effectively detect emergency vehicles, hence facilitating streamlined traffic management and prioritized passage. The empirical findings provide evidence for the efficacy of the suggested approach in mitigating traffic congestion and enhancing emergency response durations. © 2023 IEEE.

**Author keywords**

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## Document details - Intelligent Sensing and Control System for Real-Time Graded Load Shedding †

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Engineering Proceedings
Volume 56, Issue 1, 2023, Article number 137

**Intelligent Sensing and Control System for Real-Time Graded Load Shedding † (Article)**  
 (Open Access)

Revikumar, D., Loganathan, V., Narayanan, K., Ravikanth, A., Muthu Govindasamy, G.S.

Department of Electrical and Electronics Engineering, Sri Sairam Institute of Technology, Tamil Nadu, Chennai, 600044, India

**Abstract**

A power shortage is a common case prevailing in today's power scenario. Load shedding occurs when the demand power is greater than the generation power, then, the excessive load is cut to avoid power shortage. Usually, load shedding will make use of complex circuitry and systems along with expensive materials. This necessitates the need for a simple and efficient solution that meets all the requirements. The intelligent system is created with the help of microcontrollers achieving real-time load shedding. The power limit in the system is obtained from the utility company. The measured value in the system is obtained from the sensor and the value is compared to the power limit. If it is within the limit, no action is taken. When the limit exceeds the calculated value, the power supply is cut off. Graded load shedding is achieved through the above-mentioned method. Through this graded load shedding method, the need for changing the existing infrastructure is removed and the existing system is made useful for a longer period of time. As this proposed design uses the simplest of components and technologies, the financial and technical capital that is required to make this is lower when compared to the existing technologies. © 2023 by the authors.

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Document details - PERFORMANCE, EMISSIONS, AND COMBUSTION IN TURBOCHARGED DIESEL ENGINES The Effect of Rapeseed Oil Biodiesel-Diesel Blends

**Thermal Science**  
 Volume 37, Issue 6, Part 1, 2023, 2023

**PERFORMANCE, EMISSIONS, AND COMBUSTION IN TURBOCHARGED DIESEL ENGINES The Effect of Rapeseed Oil Biodiesel-Diesel Blends (Open Access)**  
 JINARWAN, K., SUBRIANINGSIH, R., DENYANINGSIH, M., HENDRIKIAN, C. J.

**Abstract**  
 The need for sustainable alternative fuels is becoming increasingly urgent to reduce the rapidly expanding demand for fossil fuels and the resulting greenhouse gas emissions. This research looks into bio-based, specifically blends made from rapeseed oil (RO), as fuel for a turbocharged diesel engine (TDI-400). The blends are created through transesterification, which yields a bio-diesel with characteristics that meet ASTM requirements. In a 4-cylinder, turbocharged diesel engine (TDI-400), the performance, emissions, and combustion (P-C) characteristics of several B20-diesel blends (B0, B5, B10, and B20) are investigated and compared with those of pure diesel. According to the findings, blends that use efficiency slightly decrease as biodiesel proportion in the blend rises. The environmental advantages of these blends are offset by a notable decrease in smoke, CO, and hydrocarbon emissions. On the other hand, greater biodiesel content results in higher emissions of NOx and CO2. The thermal efficiency of the engine for diesel, B5, B10, and B20 blends was found to be 30.1%, 30.4%, 30.6%, and 30.8%, respectively, in the diesel engine. While smoke emission decreased from 17% (B0) to 42% (B20), NOx emissions ranged from 155 ppm (B0) to 175 ppm (B20). The 20% blend's combustion characteristics closely resemble those of diesel, with maximum cylinder pressure and ignition delay of 18 bar, 21 bar, 30%, and 13%, respectively, for diesel and B20. These results offer a useful starting point for additional investigation into sustainable alternative fuels by shedding light on the prospective performance and ecological impact of rapeseed oil-based diesel blends. © 2023, Faculty of Mineral Engineering of Srika Jember. Published by the Vedic Institute of Nuclear Science, Malang, Serbia. This is an open access article distributed under the CC BY-NC-ND 4.0 International license. All rights reserved.

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 Subriani, R., Jinarwan, K., Denyaningsih, M., Hendrikian, C. J. (2023) Design of Hybrid Energy Storage and Management System in Hybrid Electric Vehicle Using Machine Learning Approach. *Proceedings of the 4th International Conference on Smart Electronics and Communication, ICSEC 2023*. Category: [Engineering](#). DOI: [10.1109/ICSEC58147.2023.10276076](#)

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Document details - Design of Hybrid Energy Storage and Management System in Hybrid Electric Vehicle Using Machine Learning Approach

**Proceedings of the 4th International Conference on Smart Electronics and Communication, ICSEC 2023**  
 2023, 2023, 2023

**Design of Hybrid Energy Storage and Management System in Hybrid Electric Vehicle Using Machine Learning Approach (Conference Paper)**  
 JINARWAN, K., SUBRIANINGSIH, R., DENYANINGSIH, M., HENDRIKIAN, C. J.

**Abstract**  
 The growing concern for reducing carbon emissions and the depletion using fossil fuels has led to a considerable increase in the development of hybrid electric vehicles (HEV) and their associated controlling and energy storage systems. The design of an efficient and effective system for storing and managing energy is crucial for the overall performance of HEVs. In this context, this study proposes a novel approach for designing a smart power storage and management system for HEVs using recurrent neural networks (RNN) based machine learning. The proposed approach involves the integration of RNN-based predictive models with the energy storage and management system of HEVs. The RNN-based predictive models are designed using historical driving data to predict the future energy patterns of the vehicle. The predicted energy patterns are then used to optimize the energy management system, which includes the control of the battery charging and discharging operations as well as the allocation of power between the battery and other power sources. Specifically, the suggested approach simulates a combined using a high-fidelity RNN model the actual-world driving patterns. The final outcome of the simulation shows that the proposed RNN-based energy storage and management system significantly reduced fuel-board energy wastages in terms of energy efficiency, battery (DoD), and vehicle performance. In conclusion, the proposed approach of using RNN-based predictive models for designing hybrid energy storage and management systems in HEVs provides a promising avenue for the creation of more efficient and effective energy management systems for HEVs. This study is intended to improve performance in the real-world, reduce emissions, and extend battery lifespan by its, thereby contributing to a greener and more sustainable future. © 2023 IEEE.

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**Criminal Activity Detection and Prevention Using CCTV Surveillance(Conference Paper)**

Subha, P., Devi, V.B., Prabavathi, R., Parvathi, Soundarya, S., Varshini Privodharshini, S.

Sri Sairam Institute of Technology, Department of Information Technology, Chennai, India

**Abstract**

The mere presence of CCTV camera can deter crime by making criminals think twice about committing an offense. This is because they know that they are being watched and that their actions may be recorded. CCTV footage can be used to identify criminals after a crime has been committed. This can help the police to apprehend the criminals and bring them to justice. CCTV footage serves as valuable evidence in criminal investigations. Recorded video can provide crucial details about events, timelines, and individuals involved, helping law enforcement agencies to identify suspects and gather evidence for court proceedings. By deterring criminal activities and aiding in the swift identification and apprehension of suspects, CCTV cameras contribute to preventing crimes from occurring or escalating. This can lead to safer communities and reduced crime rates. Machine learning-based CCTV crime detection systems can be used to analyse large amounts of CCTV footage in a short amount of time. This means that they can be used to monitor large areas, such as cities or airports. © 2023 IEEE.

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**Smart Asset Management: Tracking and Optimizing Assets with IoT Sensors(Conference Paper)**

Selvakumar, V., Sivaraman, S., Sellaja, V., Subbarajulu, A.

Sri Sakram Institute of Technology, Department of Management Studies, Tamil Nadu, Chennai, India

Meenakshi Sundaresan Engineering College, Department of Electronics and Communication Engineering, Tamil Nadu, Chennai, India

Prathyusha Engineering College, Department of Information Technology, Tamil Nadu, Chennai, India

**Abstract**

Effective asset management requires keeping tabs on and better optimizing the usage of diverse assets to boost productivity and decrease costs. By providing real-time information on assets whereabouts, conditions, and use, sensors linked to the Internet of Things (IoT) may revolutionize asset management. Sensors connected to the IoT are used in the context of asset management, with a focus on factories, warehouses, and distribution centers. Sensors may keep an eye on machinery to make sure it's working as it should, find problems before they become major, provide real-time data on stock and shipments, and increase efficiency. Data like this may be utilized to streamline processes, avoid problems, and save expenses, all of which boost productivity and delight customers. The potential benefits of IoT sensors in asset management are

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**Automated Pain Relief Chair**(Conference Paper)

Prabha, R., Jeorisha, K., Babisha, D., Venkati, S., Sriharshitha, S.  
Sri Sai Ram Institute of Technology, Department of Electronics and Communication Engineering, Chennai, India

**Abstract**

This paper presents the design, development, and evaluation of a novel voice-controlled pain relief chair which is user comfort and well-being. Chronic pain management is a prevalent concern, and traditional methods often fall short of providing immediate and personalized relief. To provide solution, we propose a technologically advanced solution that combines ergonomic chair design with voice recognition capabilities. To assess the effectiveness of the voice-controlled pain relief chair, a comprehensive user study has conducted. A diverse group participants with varying pain profiles participated in the study. Objective comfort improvement, and usability metrics were collected and analyzed. The results demonstrate the chair's ability to provide rapid and tailored pain relief through its customizable features and user-friendly interface. © 2023 IEEE.

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**A temperature-based synthesis and characterization study of aluminum-incorporated diamond-like carbon thin films**(Article)(Open Access)

Chatter, K.K., Shanmugasundaram, G., Jagann, L., Das, S., Kumar Reddy, K., Kalra, K., K., J.,  
\*Department of Mechanical and Industrial Engineering, Marudai Institute of Technology, Vengalpet, Academy of Higher Education, Chennai, India  
\*Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Chennai, India  
\*Department of Machine Engineering and Engineering Technology, Faculty of Mechanical Engineering, VIT Technical University of Vellore, Ooty, Tamil Nadu, India

**Abstract**

The present work deals with the study of various properties of aluminum (Al) incorporated diamond-like carbon (DLC) thin films synthesized using the microwave plasma enhanced chemical vapor deposition (MPECVD) technique by varying the deposition temperature (T<sub>deposition</sub>) and keeping the (P<sub>plasma</sub>) constant (1.5 mTorr). Surface morphology analysis, resistance to corrosion, wettability (contact angle), and wettability (contact angle) of the coatings were carried out using atomic force microscopy (AFM), contact wetting, electrochemical impedance spectroscopy (EIS), and wettability test. Results showed a smoother surface morphology of the coatings prepared at different process temperatures, with an increase in process temperature, the coating roughness, which is in the range of 20–50 nm. The corrosion resistance of the coating was found to be reduced with a consecutive increase in the deposition temperature from 300 (P<sub>plasma</sub>) to 400 (P<sub>plasma</sub>). Moreover, above 300 (P<sub>plasma</sub>), the resistance increases further and it may be due to the presence of fluorine. An weight percentage in the coating. The nanostructure result revealed that (P<sub>plasma</sub>) and (P<sub>plasma</sub>) of the coating increase with an increase in the CVD process temperature. The electro-optical property evaluated by (P<sub>plasma</sub>) and (P<sub>plasma</sub>), which are also associated with the same properties of the coating, was studied using the non-destructive technique. The residual stress (P<sub>plasma</sub>) calculated using Stoney's equation revealed a reduction in residual stress with an increase in the process temperature. Copyright © 2023, John Wiley & Sons, Inc.

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Shanmugasundaram, G., Venkatesh, M., Lakshmi, K.  
Effect of deposition temperature on the tribological properties of nitrogen doped DLC thin films

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Document details - A Highly Efficient Cross-Connected H-Bridge-Style Multilevel Inverter with Lower Power Components

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Engineering Proceedings

Volume 16, Issue 9, 2023, Article number 18

A Highly Efficient Cross-Connected H-Bridge-Style Multilevel Inverter with Lower Power Components(Article)(Open Access)

Legumethu, V., Venkatesh, D., Lakshmi, K.L., Suresh, K. J.

\*Department of Electrical and Electronics Engineering, Sri Sairam Institute of Technology, Chennai, 600043, India  
 †Department of Computer Science and Engineering, Sri Sairam Institute of Technology, Chennai, 600043, India

ABSTRACT

Compared to the classical inverter, the multilevel inverter finds considerable advantages that can be suitably implemented in green energy power generation. Here, an asymmetric multilevel inverter with fewer components is proposed for renewable energy applications. The proposed inverter is a cross between two H-bridge style devices. To maintain the output voltage, three different algorithms are to be implemented in the microcontroller proposed, and the best among them is chosen for implementation. The new multilevel inverter can generate suitable output voltage using three DC sources with reduced power components. The multilevel modulation is used as the control signal for the inverter. Here, MATLAB software is used to simulate the proposed inverter, and the performance of the inverter is observed. The proposed inverter is constructed in real time, and the performance of the inverter is studied by testing with load and variable speed in load. A comparative study is conducted between the two algorithms to determine which results in more efficiency and less loss in the total waveform. © 2023 by the authors. Licensee MDPI, Basel, Switzerland.

Author keywords

cross-connection, multilevel inverter, multilevel inverter, gate width modulation, load torque estimation

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Document details - Measure of Well-Being of Freelancers in it Sector

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Measure of Well-Being of Freelancers in it Sector(Conference Paper)

Yanikatchi, P., Selvakumar, V., Ramu, M., Manikandan, M., Santhilaxshan, C.R.

\*Sri Sairam Engineering College, Department of Management Studies, Chennai, India  
 †Sri Sairam Institute of Technology, Chennai, India

Abstract

Freelancers contribute significantly to the expansion of the economy and businesses within the gig economy. The ongoing research aims to assess the level of job satisfaction among IT contractors and workers by conducting surveys. A cross-sectional survey questionnaire is utilized to assess various dimensions of individuals' happiness. The scales' validity and reliability were demonstrated before conducting a one-way ANOVA to predict the life satisfaction of freelancers and IT employees. The findings have the potential to provide valuable insights into the gig economy as a whole. © 2023 IEEE.

Author keywords

Culture, encl, Freelancers, Freelance, quality, Satisfaction

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### A Study on The Market Characteristics, Consumer Purchasing, and Behaviour Towards Footwear With Reference to Vellore Dist, Tamilnadu

**Authors**  
**P. Venkatesh<sup>1,\*</sup>, V. Selvakumar<sup>1</sup>, M. Ramu<sup>2</sup>, M. Manikandan<sup>2</sup>, C. R. Senthilnathan<sup>1</sup>, M. Krishnamoorthi<sup>3</sup>**

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<sup>2</sup> Assistant Professor, Department of Management Studies, Sri Sairam Engineering College, Chennai, India  
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**Corresponding Author**  
**P. Venkatesh**

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### A Study on E Recruitment in the Confederation of Global Innovators

pdf  
 DOI: [https://doi.org/10.53255/j181.v6i126\(7\)2023](https://doi.org/10.53255/j181.v6i126(7)2023)

**Keywords:**

**Authors:**  
 E. G. V. Harikaran  
 Dr. L. Prakash  
 Dr. A. Vikraman

#### Abstract

E-recruitment is the current trend in the recruitment process and it has been adopted by many large and small organizations as the role of human resource manager in the recruitment process is changing with time managers becoming more involved in dealing with specific job opening and human resource manager taking on a more coordinating method and systems is helping to facilitate this trend by eliminating much of the routine administrative work involved in recruiting and allowing human resource manager to more easily monitor and track recruitment related activities. E-recruitment has great potential to any organization as it is up to date recruitment method current information open up geographical borders searching for talents and is time and cost saving. This study examines the use of E-recruitment among the job applicants of students who will study the attitudes promoting job applications to apply online. The study reveals that the use of E-recruitment has made it easy for the job applicants to search and find an appropriate job that meets their expectations. Further it also reveals that the most important attribute encouraging job applicants to apply online is a strong organizational culture which allows potential applicants to assess their fit with requirements, rather than just about the salary.

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<b>Paper Title</b>
AUTONOMOUS DRONE FOR SPECIES IDENTIFICATION
<b>Authors</b>
Dr.P.S.IMMACULATE , Dr. SUGANTHI SU , Mr. HEMANTH KUMAR C S , Mr. ADITYA GURJALE S
<b>Keywords</b>
Autonomous Drone, Localization, Mapping, Tangent Bug Algorithm
<b>Abstract</b>
People around the globe have a deep desire to discover lands that were never touched by any human before. People would like to come across such vast untouched lands and would like to explore their flora and fauna and would always make a comparison with the existing species and make the environmental mapping. 'Autonomous Drones' resolve this problem by telecasting the

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**Volume - 2 | Issue - 2 | December 2023**

**Satisfaction of Customers with Digital Marketing Services**

Dr. K. Beteritharan, Dr. T. Suganya Pages: 382-397

299 224

**Cite this article**

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DOI: 10.36348/ijrj.2023.2.009 Published: 25 November, 2023

**Abstract**

Customer satisfaction management is a necessary used approach for managing a company's relationships with customers, clients, and sales prospects. It entails utilizing technology to organize, automate and synchronize company operations, primarily those related to sales, but also those related to marketing, customer care, and technical support. The overarching aim is to locate, attract, and keep new clients while nurturing and retaining those the organization already has; convince former clients to return; and minimize marketing and client service expenditures. Customer satisfaction refers to a company-wide business strategy that includes customer service and other divisions. This research's major goal is to perform a statistical analysis on customer satisfaction with digital marketing services of sign works technology. The research may be carried out by soliciting consumer input and comparing the outcomes to the predicted results. By studying and comparing the perception of the customers of sign work an effective relationship with the customers is observed.

**Keywords**

Digital Marketing, Technology, Sales, Customer Satisfaction, Service, Feedback

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## An Investigation into the Field of Cloud Accounting

**Dr. K. Baranidharan<sup>1</sup>, Dr. T. Suganya<sup>2</sup>, K. Pavitha<sup>3</sup>, K. Manoj<sup>4</sup>, A. Akash<sup>5</sup>, S. Kabilan<sup>6</sup>**

<sup>1</sup>Professor in MBA, Sri Sai Ram Institute of Technology, Chennai, India  
<sup>2</sup>Department of Commerce, Uthaya College for Women, Kanchikottur  
<sup>3</sup>Department of MBA, Final Year, Sri Sai Ram Institute of Technology, Chennai, India<sup>1,2,3,4,5,6</sup>

**Abstract:** The accounting sector is at the forefront of the widespread adoption of cloud computing. "The cloud" means remote servers and computing resources that may be accessed online. It is critical to keep abreast of new technology developments. Your company might need new hardware in the competitive edge of this innovative technology. Scalability, remote access, less maintenance, and cost reduction are all features of offers. Everything you need to automate, streamline, and improve the efficiency of your company is right here. We must participate in cloud accounting as it is the wave of the future. The article delves into the conceptual nature and examination of cloud accounting.

**Keywords:** Accounting, Technology, IoT, Cloud, Software, Services

### 1. INTRODUCTION

Think about when you use internet banking. Every time you access your bank data, you're using the cloud. The cloud makes data and software accessible online, anytime, from any device. The hard drive on your computer or laptop is no longer the central hub. In the case of cloud accounting, you keep your business books online. That includes records of income and expenses, and assets and liabilities. The information is encrypted, much like a bank's, so only people with the login can view the data. Businesses started using cloud accounting software – also known as online accounting software – in the early 2000s. Most systems came with tools for quoting, invoicing, managing bills and more. Later, more advanced cloud accounting software came on. Users subscribe to an online accounting software solution and move their books to the cloud. From there on, they can access their accounts from any web browser, or from an app on their phone. Most users connect the software to their business bank account, so that banking transactions flow automatically from the bank to the books. This saves them from a lot of data entry. Over time, accounting software has revolutionized from supporting basic accounting operations to performing real-time accounting and supporting financial processing and reporting. Cloud accounting software was first introduced in 2011, and it allowed the performance of all accounting functions through the internet.

### 2. ACCOUNTING

Accounting is the process of keeping track of all financial transactions within a business, such as any money coming in and money going out. It's not only important for businesses in terms of record keeping and general business management, but also for legal reasons and tax purposes.

Accounting is a science by which monetary financial information about business enterprise is communicated and is also called the language of business. Many users need financial information in order to make important decisions. These users can be divided into two broad categories: internal users and external users. An accounting system is a system that is designed in a manner to ensure financial information. It can be either manual or computerized. The main reason

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## ACCOUNTING-RELATED AI CONCEPTS: A CONCEPTUAL STUDY

**Dr. K. Baranidharan<sup>1</sup>, B. Pavitha<sup>2</sup>, J. Geeshma<sup>3</sup>, B. Sakthi Mohana<sup>4</sup>, A. Akash<sup>5</sup>,  
 K. Manoj<sup>6</sup>, S. Kabilan<sup>7</sup>, B. Mahitha<sup>8</sup>**

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<sup>2,3,4,5,6,7,8</sup>Final Year MBA, Sri Sai Ram Institute Of Technology, Chennai, India  
<sup>9</sup>Final Year: AI&DS, Sri Sai Ram Institute Of Technology, Chennai, India  
 DOI : <https://www.ajol.info/journal/IJMETS/46831>

**ABSTRACT**

Knowledge, artificial intelligence (AI) has permeated all walks of life and has a great impact on them. It brings certain opportunities and challenges to various fields, and the accounting industry is no exception. Artificial intelligence is changing the reality of the accounting field on a rapid way, due to the benefit of improving and reducing the actual way of performing activities on this domain. Over the years, accounting has changed significantly by replacing the work with paper and pencil first with computers, but more importantly, with programs able to decrease time spent on repetitive work that reduce the amount of errors. The interest on Artificial intelligence solutions in this domain is not new but on the last years researchers become more focused on it. Despite the material progress there seems to be not enough data to support companies' willingness to embed artificial intelligence solutions into their accounting activities. Also, an important aspect of this reality is the capability of experts to adapt faster to the new status quo and to acquire the necessary skills to be able to work with Artificial Intelligence.

**Keywords:** Artificial Intelligence, Accounting, Machine Learning, Technology, Automation, Tools.

### 1. INTRODUCTION

In recent decades, artificial intelligence (AI) technology is sweeping the world, and human beings are entering the age of AI. For the financial practitioners in the accounting industry, it is necessary to set out a plan for the industry based on the perspective of future development. They should conform to the trend of the times and combine artificial intelligence with accounting work. But in the process of specific work, all aspects need to be considered. Specifically, it is necessary for practitioners to apply AI technology in accounting work to improve the quality of accounting work. Also, it is still needed to meet the corresponding challenges. AI introduces and improves the quality and efficiency of accounting work.

**Accounting**

Accounting is the process of recording financial transactions pertaining to a business. The accounting process includes summarizing, analyzing, and reporting these transactions in meaningful agencies, registers, and tax collection services.

It is effectively employed to communicate the financial performance of business to various interested parties or stakeholders. In the same way, the accounting language serves as a means to communicate matters relating to

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## A Study of the Ideas Behind Artificial Intelligence in Financial Technology

**Dr. S. Baranikumar<sup>1</sup>, Dr. T. Suganya<sup>2</sup>, Dr. N. Subashini<sup>3</sup>, P. Kothai Velu<sup>4</sup>, R. Pavithra<sup>5</sup>, A. Devika<sup>6</sup>**

<sup>1</sup> Professor in MBA, Sri Sai Ram Institute of Technology, Chennai, India  
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<sup>5</sup> Department of MBDS, Final Year, Sri Sai Ram Institute of Technology, Chennai, India

**Abstract:** Artificial intelligence has the potential to truly revolutionize the financial industry by providing answers that are both knowledgeable and intelligent in problems that people are unable to solve on their own. FinTech systems that are powered by artificial intelligence make use of machine learning algorithms and natural language processing in order to analyze vast volumes of data and provide forecasts or judgments. Artificial intelligence is being used in the financial technology industry to improve the efficiency, personalization, and security of services provided by financial institutions. This is causing a change in the way that these institutions manage their business. Significant technical developments that are revolutionizing financial services have been brought about as a result of the incorporation of artificial intelligence and machine learning in the financial sector. Currently, artificial intelligence is being utilized by financial institutions in order to enhance the client experience, automate financial services, and make decisions based on actual facts.

**Keywords:** Business, Technology, Financial Services, Artificial Intelligence, Machine Learning

**1. INTRODUCTION**

FinTech is defined as "a new financial industry that uses technology to improve financial activities." The term is now used to describe any new approach that improves and automates financial services. Innovative technologies such as artificial intelligence and blockchain are driving the rapid development of FinTech, which has piqued the interest of investors, researchers, and regulators. Startup companies produce more user-friendly products, academics study the nature and impact of new technology, and policymakers estimate the projected use of FinTech. Although the FinTech industry is currently immature, it is continually growing. This article examines the impact of artificial intelligence, an emerging technology, on the growth and development of FinTech.

The financial sector covers many different types of transactions in such areas as real estate, consumer finance, banking, and insurance. It also covers a broad spectrum of investment funding, including securities. The financial services industry encompasses all roles that deal with managing and exchanging money. Sometimes called the financial sector or financial services sector, this industry includes segments such as banking, investing, insurance, and financial analysis. Financial services include accountancy, investment banking, investment management, and personal asset management. Finance functions normally involve activities like online funds and insurance that is a continuous

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