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Sr.No	Article	Gist	Author	Source
1	Leveling the Playing Field: How Generative Al is Revolutionizing SMES and MMEs in India	As small and medium-sized enterprises (SMEs) and mid-market enterprises (MMES) become pivotal to economic growth, industry leaders like SAP report that a substantial portion of their business revenue-up to 80 percent-comes from this sector, highlighting the growing importance and potential of these businesses in the global market. In light of this, concerted efforts from industry associations like NASSCOM are crucial in equipping these enterprises with advanced technologies such as generative AI, ensuring they remain competitive and innovative in a rapidly evolving digital landscape.	Minu Sirsalewala	DATAQUEST MAY 2024
2	PSO BASED DEEP BELIEF NETWORKS LEARNING FOR IOT BASED CROP DISEASE DETECTION ON PADDY LEAVES USING CLOUD	The Internet of Things (IoT) with advanced machine learning techniques presents significant potential for agricultural applications, particularly in the domain of crop disease detection. Paddy, a staple food for millions, is highly susceptible to various diseases that can drastically affect yield and quality. Early and accurate disease detection is crucial for effective management and mitigation. Traditional methods are often labor-intensive and less reliable, underscoring the need for automated, accurate, and scalable solutions. The primary challenge lies in developing a robust system capable of accurately identifying diseases in paddy leaves using IoT-collected data. This task is complicated by the variability in disease manifestation and environmental conditions, which can affect the quality and	M. Parameswari, B. Yuvaraj, S. Thumilvannan, E. Munuswamy	ICTACT Journal on Image and Video Processing (Volume: 14 , Issue: 4 , Pages: 3305 - 3310)

		consistency of the collected data. Efficient feature extraction and classification techniques are essential to address these issues and ensure high accuracy. This study proposes a novel approach combining Particle Swarm Optimization (PSO) for feature extraction with Deep Belief Networks (DBNs) for classification. IoT devices capture high-resolution images of paddy leaves, which are then processed in the cloud. PSO is employed to optimize the feature extraction process by selecting the most relevant features from the image data. These optimized features are fed into a DBN, which is trained to classify the images into healthy or diseased categories. The use of cloud computing ensures the scalability and computational efficiency of the system. The proposed method demonstrates significant improvements in accuracy and processing speed. The PSO-based feature extraction enhances the relevance of features, reducing the dimensionality and improving the DBN"s performance. Experimental results show an accuracy rate of 96.3%, with a reduction in processing time by 35% compared to traditional methods. The system"s precision and recall rates are 95.8% and 94.7%, respectively, highlighting its effectiveness in real-world applications.		
3	DESIGN AND ANALYSIS ON IMAGE COMPRESSION USING NEURAL NETWORKS	Due to the explosion of video based information proliferating in the world due to the ubiquitous usage of video cameras the amount of video based information that is currently being generated around the world is huge. And due to security purposes it is becoming imperative that these video data	Shivganga Patil, Lakshmi Patil	ICTACT Journal on Image and Video Processing (Volume: 14 , Issue: 4 , Pages: 3301 - 3304)

		needs to be stored in computer memory for an extended period of time for referrals by security agencies. Because of the advancement of imaging technologies that is being used nowadays it is possible to capture extremely detailed high definition images. But it is not physically possible to store all these high-definition images in computer memories for a long time because infrastructure providers will run out of memory. Image compression is a technology which assists us in this regard. Nowadays this technology has moved from image compression to video compression to compression of 3- dimensional videos which is now becoming more and more popular due to the ever increasing usage of Augmented Reality, Virtual Reality and Ec The quantity of image data produced in modern surveillance networks is rising exponentially year on year which necessitated development of novel schemes for reducing the sizes of the images captured by CCTV cameras while not compromising on the image quality increases when the images are decompressed. This paper proposed a novel Deep Neural Network based method of compressing images in which the image accuracy is not lost but the space it occupies in the memory storage of the computes is reduced greatly compared to other image compression schemes, this proposed scheme is best suited for usage in CCTVs and other networks using Internet of Things which record images and videos continuously.		
4	PREDICTIVE MAINTENANCE IN INDUSTRIAL	In industrial systems, predictive maintenance has emerged as a crucial strategy to minimize	B. Selvalakshmi, P.	ICTACT Journal on Soft Computing

	SYSTEMS USING DATA MINING WITH FUZZY LOGIC SYSTEMS	downtime and optimize operational efficiency. This study explores the utilization of data mining techniques, specifically fuzzy logic systems, for predictive maintenance. The background section examines the importance of predictive maintenance in industrial contexts and highlights the limitations of traditional approaches. The methodology section outlines the process of employing fuzzy logic systems for predictive maintenance, including data preprocessing, feature selection, fuzzy rule generation, and model evaluation. The contribution of this research lies in providing a comprehensive framework for implementing predictive maintenance using fuzzy logic systems, offering insights into the integration of data mining techniques with industrial systems. Results demonstrate the effectiveness of the proposed methodology in accurately predicting maintenance needs and minimizing unplanned downtime. Findings suggest that fuzzy logic systems can enhance predictive maintenance capabilities by handling uncertainties and vagueness inherent in industrial data.	Vijayalakshmi, N Subha, T Balamani	(Volume: 14 , Issue: 4 , Pages: 3361 - 3367)
5	ENHANCING POWER SYSTEM STABILITY USING NEURO-FUZZY CONTROL INTEGRATED WITH GENETIC ALGORITHMS	Power system stability is crucial for ensuring the reliable operation of electrical grids. Instabilities can lead to blackouts, equipment damage, and economic losses. Traditional control methods may struggle to handle the complexity and non-linearity of power systems. This study proposes a novel approach that integrates neuro-fuzzy control with genetic algorithms to enhance power system stability. Neuro-fuzzy systems excel at handling complex	Sachin Vasant Chaudhari, Sarika Shrivastava, Gadibavi Jyothi, Harshal Patil	ICTACT Journal on Soft Computing (Volume: 14 , Issue: 4 , Pages: 3311 - 3316)

		and non-linear systems, while genetic algorithms offer efficient optimization capabilities. The neuro-fuzzy control and genetic algorithms provides a robust framework for optimizing power system stability. This approach aims to mitigate the challenges posed by system complexities and uncertainties. Through simulations and case studies, the effectiveness of the proposed method is demonstrated. The integrated approach shows improved stability performance compared to conventional methods. Additionally, the flexibility of the system allows for adaptation to varying operating conditions and disturbances.		
6	ENHANCING SERVICE DISCOVERY IN MOBILE AD HOC NETWORKS USING SEMANTIC CLUSTERING AND HYBRID TRUST MANAGEMENT	Mobile Ad Hoc Networks (MANETs) facilitate communication among mobile devices without relying on fixed infrastructure. However, service discovery in MANETs faces challenges due to the dynamic topology and limited resources of nodes. Existing solutions often lack efficient resource utilization and fail to address trust management adequately. The conventional approaches for service discovery in MANETs are inefficient due to their inability to incorporate semantic clustering and robust trust management. Semantic clustering enhances the accuracy of service discovery by grouping nodes based on similar interests or functionalities. Meanwhile, traditional trust management mechanisms are inadequate in dynamic environments, leading to unreliable service discovery results. The proposed methodology involves developing a semantic clustering algorithm to organize nodes based on their semantic	S. Venkatesh Babu, P. Ramya, D. Jebakumar Immanuel	ICTACT Journal on Communication Technology (Volume: 15 , Issue: 1 , Pages: 3159 - 3163)

		similarities. Additionally, a hybrid trust management system is implemented to assess the reliability of discovered services. The system combines both reputation-based and recommendation-based trust models to enhance the accuracy of trust evaluations. Through extensive simulations and experiments, the effectiveness of the proposed approach is demonstrated. The results indicate that the integration of semantic clustering and hybrid trust management significantly improves service discovery efficiency and reliability in MANETs. The approach achieves higher precision and recall rates compared to conventional methods, even under dynamic network conditions.		
7	Development of Smart Pill Expert System Based on IoT	An improved version of the smart pill expert system known as SPEC 2.0 is presented in this paper to give a knowledge of IoT in healthcare. At the designated moment, the system strives to accurately dispense the recommended dosage of medication. The user-friendly interface of SPEC 2.0 is one of its standout features since it makes it simple for people of all ages to utilize among all the smart medicine dispensers. The main objective of this system is to deliver control and monitoring capabilities via an android application, free of in-app purchases or subscriptions. Numerous features, including the capacity to send alerts and SMS messages regarding pill distribution, are included in the android application. With the help of this tool, users can keep on schedule with their medicine and receive frequent reminders. In order to successfully manage the	P. Dayananda & Amrutha G. Upadhya	Journal of The Institution of Engineers (India): Series BVolume 105, pages 457–467, (2024)

		issue of overdosage, the system lays a special emphasis on preventing the consumption of medication in excess amounts. Users of SPEC 2.0 can reduce their risk of adverse drug reactions by following the directions for dose intervals. Daily tests have been conducted to ensure that SPEC 2.0 works as intended, and thorough records have been kept of each test. These tests offer important information about the system's dependability and its capacity to deliver precise drug dosages on a regular basis. In conclusion, the improved smart pill expert system reveals its potential to dramatically increase medicine adherence and avoid any health concerns brought on by ingesting the wrong dosage.		
7	Improved Switching Performance in T Type Inverters for High Voltage Induction Motor Application	Recent years, Inverters have played a vital role in industrial drive control applications such as electrical DC-AC energy conversion, motor speed control etc. An increase in switching frequency of the inverter increases the quality of power. However, the increase in switching frequency beyond 3000 V results in high heat loss across semiconductor switches of the inverter. Several researchers have developed various inverter topologies for high voltage and switching frequency applications. In this work, a three level T-Type inverter fed induction motor is designed and developed with improved switching for high voltage applications. Further, the hardware prototype of a three level T-Type inverter is tested for induction motor application to find the performance of the proposed design. The proposed three-level T-Type bridge is simulated, and the experimental and simulation results are compared. Results demonstrate	Kudiyarasan Swamynathan & Sitangshu Sekhar Biswas	Journal of The Institution of Engineers (India): Series BVolume 105, pages 575–583, (2024)

		that the proposed three level T-Type inverter for high voltage application has better efficiency than conventional converters.		
8	Design and Development of a Mobile Sit-to-Stand Assistive Device	This work presents the design and development of an assistive device to enable natural sit-to-stand motion for individuals with lower extremity weakness. The device is conceptualized based on the synthesis of a four-bar linkage using the Burmester curve theory, the coupler of which follows the elbow trajectory of the user during sit-to-stand motion. The four-bar mechanism is incorporated in a frame that ensures stability during STS and has multiple support locations for easy and comfortable STS transfer of the user. The STS device is portable and actuated by a pair of battery-operated linear actuators enabled with a switch operated by the user. The STS device is fabricated using extruded aluminium profiles which makes it lightweight, modular for easy assembly, and adjustable to different users. The device is tested on a number of healthy subjects for whom the ground reaction forces (GRF) during STS are compared with and without using the device. Approximately 45% reduction of GRF was noted while using the STS device. Further a dynamics based optimization model was created to calculate the forces at the various support points where the user comes in contact with the STS device. The results of optimization model were compared with an experiment and found to be within 10% of experimental data. The designed and developed STS device has potential of becoming a commercial product.	Satyajit Halder & Sourav Rakshit	Journal of The Institution of Engineers (India): Series CVolume 105, pages 299–312, (2024)
9	Prospects of Additive Manufacturing	Additive manufacturing/3D printing is a revolutionary	Abhinav Sarma &	Journal of The Institution of

	Technology in Mass Customization of Automotive Parts: A Case Study	technology that uses layers of material to create objects from 3D digital data for various applications. Now, it also opens the doors to cost-effective mass customization. With near-scale production efficiency, mass customization attempts to produce products and services that best fit individual consumers' needs. In this pursuance, the present work aims to investigate the prospects of additive manufacturing in mass customization for the automotive industry. A case study of automotive parts, i.e. mirror panel of bikes such as racing bikes, bobber bikes and new designs and the results, is compared with customized designed components. A significant saving of material and manufacturing time with improved strength has resulted in corresponding to the optimized set of parameters. The material weight of the new design is approximately 32.30% and 21.52% lower than the racing bike and bobber bike, respectively. The customized model developed in this paper is fixed from both ends replacing the traditional ball joint and installing a vibrating insulator at the joint in the handle for less image distortion. The customized model developed will be helpful for efficient & sustainable product design and manufacturing.	Rajeev Srivastava	Engineers (India): Series CVolume 105, pages 371–386, (2024)