# Editorial

In this issue, we present 16 accepted papers of diverse array addressing crucial challenges and advancements in various domains of technology and engineering. These papers contribute valuable insights and propose innovative solutions to contemporary issues. The following paragraphs provide a brief overview of each paper, outlining its objectives, methodologies, and key findings.

Globally, road transportation plays a pivotal role in modern civilization, but the presence of road anomalies poses a significant threat to safety. The author addresses this concern by introducing an intelligent road anomaly detection system for autonomous vehicles. The system utilizes a modified Histogram Oriented Gradient (HOG) and Fuzzy Logic Control (FLC), presenting promising results in the identification of speed bumps and potholes [1].

The author, focus to risk analysis for soft targets, particularly cultural events like music concerts. The authors employ a multi-criteria decision-making method, fuzzy TOPSIS, to objectively assess the risk of violent attacks. The study demonstrates that this approach provides consistent and practical results for enhancing security measures [2].

The author tackles the critical issue of battery fires caused by overcharge. Introducing a temperature-compensated overcharge protection measurement technology, the authors propose a wireless-enabled Battery Management System (BMS) that enhances stability while maximizing convenience [3].

Moving on to the education sector, the author introduces a multiplatform application for the automatic recognition of personality traits in learning environments. The application employs machine learning models to personalize and adapt content based on the dominant personality traits of students, enhancing the overall learning experience [4].

Despite the favorable conditions for renewable energy in Qatar, the adoption of solar panels faces challenges. The author explores these challenges through a two-phase study, offering insights that can inform stakeholders, policymakers, and future researchers in enhancing the deployment of solar panels in the region [5].

In the realm of cybersecurity, the author introduces a hybrid intrusion detection system utilizing the Activity and Event Network (AEN) graph model. The system effectively identifies threats through signature-based and anomaly-based detection mechanisms, showcasing promising results in intrusion detection datasets [6].

The author presents an omnidirectional multi-view image measurement system designed for 3D reconstruction and multi-view imaging. Utilizing four cameras in a co-sphere framework, the system demonstrates versatility in capturing comprehensive multi-view images for various applications [7].

The author introduces a multi-camera system for measuring the movement of a pilot's body during flight operations. This system records and analyzes the pilot's body reactions in real-time, providing valuable insights into human-computer interaction and enhancing cockpit design [8].

Power loss minimization in electrical power systems is the focus, where an Extreme Learning Machine (ELM) method is proposed for solar irradiation forecasting. The results demonstrate the

efficacy of the ELM algorithm in reducing power losses, contributing to more efficient power system operations [9].

The author addresses the automatic detection of olive trees in RGB images using a RetinaNet model and the DeepForest Python package. The proposed approach shows significant improvements over pretrained models, highlighting its potential for accurate tree detection in unmanned aerial vehicle (UAV) imagery [10].

Moving into decision-making under uncertainty, The author introduces the multistage one-shot decision-making approach (MOSDMA). Applied to reevaluate a technology project decision problem, MOSDMA incorporates salience information, offering a promising alternative for multistage decision-making under uncertainty [11].

A hybrid machine learning model is developed to enhance IT project cost and duration prediction accuracy. The MLR-DNN model outperforms traditional predictive project management tools, demonstrating its reliability and effectiveness [12].

Job performance prediction is the focus, where a hybrid neural network and particle swarm optimization approach is employed. The study emphasizes the significance of Particle Swarm Optimization (PSO) in improving model performance, presenting promising results for recruitment screening [13].

This paper delves into optical fiber displacement sensors, specifically addressing scattered-bend loss. The presented sensor utilizes a multimode polymer optical fiber and side coupling technique, offering a simple, comprehensive, and cost-effective solution with potential applications in industrial settings [14].

Addressing cybersecurity concerns in the Internet of Medical Things (IoMT), the author introduces a deep learning approach to detect Covert Timing Channel (CTC) attacks. The proposed pipeline, incorporating Convolutional Neural Network (CNN), Siamese Neural Network (SNN), and K-Nearest Neighbors (K-NN), demonstrates high accuracy in identifying covert messages [15].

A triple-band MIMO antenna design for 5G/Wi-Fi 6 applications is presented. The proposed design incorporates a symmetric parasitic structure, significantly improving isolation between radiation elements. With compact dimensions and wide bandwidths, the MIMO antenna design shows promise for high-performance wireless communication systems [16].

In summary, this special issue encompasses a wide range of cutting-edge research, from intelligent road anomaly detection and risk analysis to renewable energy challenges, personality trait recognition in learning environments, and advanced technologies in cybersecurity, decision-making, and wireless communication systems. Each paper contributes valuable insights and solutions, advancing our understanding and capabilities in these diverse fields.

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