**EDITORIAL**

# Editorial on "recent advances in logistics transportation with autonomous systems"

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Autonomous transportation in logistics is the prime focus, with further deep dive into its application across various aspects of the supply chain. Autonomous systems to assist logistic transportation with minimal human interventions are on the horizon of logistic and operational system research. This special issue brings together researchers from various backgrounds to discuss different transportation modes and to explore the latest state of play of autonomous vehicles and the issues arising while implementing it in logistics. In parallel, this special issue also encourages the researchers and practitioners to share insights and to identify the co-benefits of deploying autonomous systems in logistics transportation. The primary objective of this special section is that it develops a wider understanding of autonomous systems in different sectors of logistics and shipping, such as offering safe and secure transportation for the movements of the goods throughout the product life cycle. This special section includes a series of around 50 articles, and all these were selected after a careful review process.

The first article in this series deals with the routing and scheduling of intelligent autonomous vehicles for industrial logistics systems. They are enabling the operators to deal with an increasingly competitive environment and with improved performance. The second article presents a technique of multi-sensor information fusion for IoT-assisted smart autonomous vehicles. This scheme improves logistics activities across smart cities. The following article presents an efficient method for disturbance analysis and train scheduling using soft computing algorithms. The next article presents a predictive traffic model and intelligent energy management systems for autonomous vehicles. This work optimizes the logistic process by effectively predicting the traffic constraints. Another interesting article presents a density scaling algorithm for traffic management in an autonomous environment. This is made possible with predictive learning techniques. The results indicate an error-free prediction with improved performance.

The next set of articles applied soft computing techniques for the efficient navigation of autonomous vehicles, and also they assist with the surveillance processes. The authors present a deep learning-based approach for the video surveillance of autonomous driving vehicles with an intent to prevent accidents and reduce the time delay in logistics. The following article presents a real-time image enhancement scheme for automatic accident detection and prevention using deep learning. In the next article, the authors present an optimized least square support vector machine to improve load forecasting in autonomous vehicles. Followed by this, the authors apply emotional intelligence for the effective navigation of autonomous vehicles. Next, a self-controlled navigation system for autonomous vehicles was presented using the evolutionary machine learning algorithm. Consequently, the authors specifically focus on the navigation of the maritime transport network. They have implemented soft computing approaches along with artificial intelligence to streamline the navigation of autonomous vehicles in maritime environments.

The next set of articles focus on energy efficiency and safety aspects of autonomous vehicles in logistics. Various innovative approaches based on fuzzy logic, dynamic distributed iterative computational models, deep convolutional neural networks, multi-objective evolutionary

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optimization were implemented to achieve the intended objectives. An improved multi-objective evolutionary optimization algorithm is presented to optimize the performance of autonomous vehicles. The next article focuses on the energy efficiency aspect of the autonomous system in the agricultural sector. I also assist in the routing process. Next, an obstacle avoidance methodology for intelligent vehicles using soft computing approaches is given to enhance the energy efficiency measures. The following article applies a vision-based algorithm for efficient routing and energy efficiency management in autonomous vehicles. Next, a routing planning algorithm is based on recurrent neural networks for efficient logistics management in the agricultural sector. Next, a machine vision-assisted soft computing model was presented for total coal consumption and fuel management in autonomous vehicles.

Followed by these, a deep convolutional neural network model was presented to enhance the safety and security of autonomous vehicles in logistics. An artificial bee colony algorithm was developed to prevent DDoS attacks and numerous other cyberattacks in the autonomous transportation of logistics systems. Next, an evolutionary machine learning approach was defined to prevent cyberattacks in logistics transportation and CPS. Further, the authors also present interesting approaches to effectively managing logistics transportation during pandemic situations. They have defined a soft computing-assisted intelligent approach for predicting and mitigating supply chain

risks, and they greatly assist in resilience through effective implementation of autonomous vehicles. Finally, the last few articles focus on the effective implementation of soft computing approaches to design and implement autonomous vehicles. This article presents integrated technologies and simulation analysis for the extensive development of transportation logistics.

The response from the research community is significant, and all the articles that are approved for publication have undergone a double-blinded review process and meet the standards of the journal. We ensure that this special issue contributes to the development of autonomous systems for logistics and transportation, also, for the soft computing research community from an application perspective. We are very much grateful to all the authors for their innovative contributions and all the reviewers for their timely efforts. Finally, we thank the Editor-in-Chief for offering us the privilege to edit this special issue in this reputed journal.

## Declarations