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Special Issue on

Advances in Artificial Intelligence and Operations Research for Sustainable Transportation Systems 2024

CALL FOR PAPERS

Green and environmentally friendly transportation planning presents a contemporary challenge for both public and private organizations. The increasing demand for the implementation of innovative and advanced transport solutions is driven by the need to reduce environmental and social impacts within the operations. Within this landscape, current trends emphasize the need to integrate novel strategies and approaches into transport systems, aiming to decrease energy usage and minimize waste and pollution generation. Pursuing this goal and aligning with the green dimension requires the development and review of current models and methods in light of modern transport solutions and technologies, such as energy reuse, alternative fuels, hybrid and green-energy-based vehicles, collaborative planning, and the implementation of autonomous vehicles and truck platooning.

To address these challenges, solutions, approaches, and methodologies play a pivotal role in helping managers and decision makers design and develop transportation systems. Simultaneously, these efforts take into account environmental-related advances. Research progress is driven by advancing the way data are collected, processed, and utilized within quantitative and decision-support approaches. Furthermore, the integration of new smart transport technologies and artificial intelligence, including machine learning and meta-learning, can yield significant effects. To fully capture and utilize the potential of these latest developments, it is necessary to consider and analyze how artificial intelligence (AI) approaches and decision support systems collaboratively contribute to fostering efficient and environmentally friendly transport operations.

The aim of this Special Issue is to highlight the ongoing progress of artificial intelligence approaches in designing, developing, and promoting green and sustainable transportation systems. This issue serves as a platform for research exploring and addressing transportation problems within the interconnected realms of planning, design, and operations. Submissions are encouraged to incorporate advanced transport technologies and artificial intelligence techniques that not only support and enhance transport planning but also promote green development and mitigate negative environmental impacts.

We welcome original research and review article contributions to this Special Issue, which should aim to showcase the progress made in employing artificial intelligence and operations research to design, develop, and promote sustainable transportation systems. By emphasizing optimization, intelligent data use, and advanced decision support, researchers can provide valuable insights into ongoing efforts to address the environmental challenges associated with transportation. We encourage submissions that contribute to the interplay between transportation planning, design, and operations, fostering a deeper understanding of the potential of these innovative approaches in shaping the future of sustainable transportation.

Potential topics include but are not limited to the following:

- AI and Operations Research Techniques for Green Transport Planning
- Mathematical Modeling and Programming Approaches
- Quantitative evaluation of green transportation systems
- Theoretical and/or empirical analysis of AI approaches in green transportation
- AI techniques for online and offline planning
- AI and mathematical programming in green transportation planning
- Sustainability in green transportation systems using artificial intelligence
- Data-Driven Planning Approaches Considering Environmental-Related Features
- Smart transport solutions using artificial intelligence (AI) to reduce environmental impacts
- Emerging Transport Technologies to Support Synchromodal Transport Network Planning
- Heuristics-based systems, metaheuristics, and hyperheuristics
- Integrating real-time information into optimization frameworks
- Transportation approaches with shared infrastructure and resources

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.wiley.com/submit?specialIssue=541514.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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