Artificial Intelligence in Railway Transport and Infrastructure Applications

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Message from the Guest Editors

This Special Issue (SI) aims to address the urgent needs of the railway industry by exploring innovative AI-driven solutions to revolutionize the sector. This issue will present the challenges faced by the industry, such as safety concerns, efficiency bottlenecks, and sustainability issues, and how AI can offer tangible improvements. This issue will also highlight the role of data analytics, predictive maintenance, and automated control systems in enhancing operational reliability and passenger experience. Ultimately, this Special Issue will serve as a roadmap for integrating AI technologies into the railway industry, paving the way for smarter, safer, and more efficient transportation networks.

This SI will supplement existing literature by providing up-to-date case studies and research findings in AI applications for the railway industry. This issue will offer a comparative analysis of traditional methods versus AI-enhanced approaches, demonstrating the benefits and potential of AI in this urgent transport domain. In doing so, this issue will help enhance the modern railway systems with AI, presenting a deeper understanding of their transformative impact on the railway sector.

Special Issue