Special Issue

Next-Gen Risk Management: AI-Driven Solutions for Engineering and Construction Projects

Message from the Guest Editors

Artificial Intelligence (AI) is revolutionizing risk management in engineering and construction, providing predictive insights, automation, and real-time monitoring to enhance safety and efficiency. Traditional risk management often relies on manual processes and historical data, leading to inefficiencies and unforeseen hazards. AI-driven solutions, including machine learning, computer vision, and IoT integration, offer advanced capabilities for risk identification, assessment, and mitigation. This Special Issue explores AI's role in modern risk management for engineering and construction. We welcome original research, case studies, and reviews highlighting AI's transformative impact on safer, more resilient, and efficient construction practices. Topics of interest include, but are not limited to:

- AI-based predictive risk modeling
- Machine learning for hazard detection
- AI integration with BIM, IoT, and digital twins
- AI-driven safety compliance monitoring
- Computer vision for site safety
- Autonomous systems for high-risk environments
- AI-powered decision support in risk management

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About the Journal

Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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