Special Issue

Artificial Intelligence and Optimization Methods in Construction Industry

Message from the Guest Editor

The growth of the construction industry has considerably been affected by a wide range of challenging issues, such as cost and time overruns, productivity, health and safety, and resource shortages. Furthermore, the construction industry is one of the least digitized industries globally, making it challenging to address its current problems. Artificial Intelligence (AI), a cutting-edge digital technology, is currently reshaping many industries. AI's subfields, such as machine learning, optimization methods, knowledge-based systems, and computer vision, have been successfully applied in other industries to improve profitability, efficiency, safety, and security. While acknowledging the benefits associated with AI, numerous AI-related challenges remain in the construction industry. Therefore, more attention should be devoted to filling the existing gaps in construction-industry-related studies. We invite researchers from a variety of disciplines to submit original research for consideration in this Special Issue. This line of research is necessary in order to address emerging construction industry challenges.

Guest Editor

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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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