Special Issue

Generative AI in Architecture, Engineering and Construction: Innovations and Applications

Message from the Guest Editors

The Architectural, Engineering, and Construction (AEC) industry is undergoing a profound digital transformation that aims to improve the efficiency, effectiveness, and sustainability of building and infrastructure systems. This transformation relies on advanced automation technologies and tools for efficient data collection and processing, informed decision-making, and seamless collaboration among various stakeholders throughout the lifecycle of these systems.

In recent years, generative AI, particularly large language models, has demonstrated significant potential to address a wide range of challenges and unlock new applications across various industries, including AEC. Its capabilities, including human knowledge embedding, generic reasoning and problem-solving, multimodal data understanding and processing, and using and making tools, position it as a transformative technology for the AEC sector.

We invite the submission of original research articles focused on theoretical and technological developments, real-world case studies, and critical reviews that explore the application of generative AI across all lifecycle stages of buildings and infrastructure.

Guest Editors

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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.

Editor-in-Chief

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