

## Application of Machine Learning in Structural Engineering in Construction

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Deadline for manuscript  
submissions:

**closed (31 August 2023)**

### Message from the Guest Editors

Artificial intelligence (AI) is currently transitioning from research to deployment. In civil engineering (CE), the development of AI-related technologies represented by machine learning, computer vision and intelligent robotics is also on the rise. By exploring the intersection and integration of these technologies with CE, this Special Issue is dedicated to demonstrating the possibilities for leveraging machine learning, computer vision, and robotics in CE, including, but not limited to, the following wide range of topics: Performance prediction and evaluation based on machine learning

Improvement and optimization of machine learning algorithms in CE

Challenges and solutions of machine learning in CE applications

Computer automatic visual recognition for CE

Deep Learning applied for structural control and structural health monitoring

Application of 3D point cloud data in Civil Engineering

Robotic automatic construction and building technology

Ingenious applications of robots in CE

Improvement of deep learning algorithms for scene-specific defect detection



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## 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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