# Special Issue

# Application of Artificial Intelligence (AI) and Machine Learning (ML) in Geotechnical Construction and Maintenance

## Message from the Guest Editors

With the rapid development of computational technology, artificial intelligence (AI), machine learning (ML), and deep learning (DL) are becoming popular and powerful tools in geotechnical and structural engineering. For instance, prediction of ground movements in tunneling, risk assessment of slope stability, concrete surface damage identification during maintenance, AI-aided structure health monitoring, etc. To introduce the advanced AI algorithms and framework into practical problems in both construction and maintenance stages, this Special Issue will highlight recent value-added contributions to the state of the art and state of practice for application of AI, ML and DL in geotechnical and structural engineering. We seek high-quality research manuscripts covering the following topics:

- Geological modelling in underground structure;
- Advanced numerical simulation;
- Data-driven optimization during project construction;
- AI-assisted decision-making in project maintenance;
- AI-aided structure healthy monitoring;
- Safety assessment of buildings subjected to underground construction;
- Case study using AI, ML or DL.

## Guest Editors


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## Deadline for manuscript submissions

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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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manuscripts are peer-reviewed and a first decision is provided to authors approximately 14.7 days after submission; acceptance to publication is undertaken in 3.5 days (median values for papers published in this journal in the first half of 2026).