

*Special Issue Reprint*

## **Intelligence Techniques Applied in Infrastructure, Engineering and Construction**

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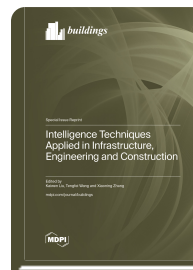
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This reprint comprises one Editorial and twenty-three peer-reviewed papers from the concluded Special Issue “Intelligent Techniques Applied in Infrastructure, Engineering and Construction” in *Buildings*. Together they capture the rapid transition of artificial intelligence, machine learning, and data-centric analytics from research prototypes to indispensable tools across the infrastructure lifecycle. The contributions address underground excavation, bridge and tunnel risk governance, ballastless-track monitoring, hybrid optimization of concrete thermodynamics, UAV-assisted defect localisation, explainable deep-learning for cost estimation, and the uptake of Fourth Industrial Revolution technologies on construction sites. Methodological advances range from ensemble classifiers, Bayesian networks and transformer-enhanced computer vision to physics-informed surrogate modelling and mixed-heuristic optimization, while materials investigated span ultra-high-performance concrete, fiber-reinforced polymers, unsaturated clayey sands and mechanically connected precast piles. By fusing domain knowledge with advanced algorithms, the articles demonstrate measurable gains in safety, efficiency, carbon reduction and lifecycle resilience, offering engineers and researchers actionable guidance for responsible, data-driven infrastructure practice.

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