Special Issue

Advances in Machine Learning for the Prediction of Construction Materials Properties

Message from the Guest Editor

This Special Issue, “Advances in Machine Learning for the Prediction of Materials Properties,” is dedicated to cutting-edge research that explores the use of ML techniques for modeling and optimizing the properties of critical construction materials, including soils, unbound aggregates, cementitious composites, and asphalt mixtures. Emphasis is placed on how ML can significantly minimize testing time and reduce the reliance on extensive laboratory programs without compromising prediction reliability. Innovations such as deep neural networks, support vector machines, and ensemble learning are capable of modeling nonlinear and multi-factorial behaviors that conventional empirical models cannot capture. These tools are reshaping the way we design, test, and manage materials in civil engineering applications, paving the way for a more sustainable, efficient, and resilient built environment.

Guest Editor

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