Special Issue

Machine Learning Applications in Earthquake Engineering

Message from the Guest Editors

Machine Learning is expected to significantly advance earthquake engineering research and practice. Currently, there are two main approaches in this field: physics-based methods, which are transparent, interpretable, and somewhat predictable, and data-driven Machine Learning models, which are unique and can be difficult to interpret. Consequently, there is a growing trend toward finding a balance between these approaches. Since the lack of physical interpretation in Machine Learning models can limit their applicability, integrating physical research into Machine Learning-based earthquake engineering studies is essential. With the support of next-generation data sharing and sensor technologies, Machine Learning holds great potential to revolutionize earthquake engineering. It has been applied in four key areas: seismic hazard analysis, system identification and damage detection, seismic fragility assessment, and structural control for earthquake mitigation. This Special Issue invites contributions on all these topic areas, as well as on Machine Learning methods in earthquake engineering.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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