

Special Issue

Machine Learning for Fatigue Design

Message from the Guest Editors

The fatigue response is governed by concurring phenomena, e.g., applied load, manufacturing defects, material microstructure, component size, residual stresses, that must be accounted for to guarantee a safe design. The recent advancements in the field of machine learning methods presents an opportunity for innovative data-driven approaches that can predict the fatigue response learning from the experimental observation. The increasing interest of the engineering community to data-driven methods fostered their application to fields, including as structural health monitoring and material modelling, which demonstrate the huge potentiality of data-driven methods to predict complex responses.

This Special Issue aims at collecting the recent advancement in the machine learning application to the fatigue design of structures. Research articles on the application of machine learning methods (e.g., neural networks, gaussian process, SVM) and its integration with phenomenological and empirical knowledge (e.g., physics-informed, theory-guided, physics embedded) to the fatigue design and literature reviews are welcome.

Guest Editors

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Deadline for manuscript submissions

closed (15 May 2025)



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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.

Editor-in-Chief

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