Special Issue

Machine Learning Based Predictive Maintenance and Condition Monitoring

Message from the Guest Editor

With the advent of advanced data analytics and machine learning algorithms, industries across various sectors are leveraging these technologies to optimize maintenance practices and enhance operational safety. Machine learning has become an essential tool for predictive maintenance and condition monitoring. This Special Issue aims to explore the state of the art in machine learning for predictive maintenance and condition monitoring. We encourage the submission of original research articles, reviews, and short communications focused on the integration of machine learning into predictive maintenance strategies. Topics of interest for this Special Issue include, but are not limited to, the following:

- Industrial big data analysis and data mining;
- Intelligent fault diagnosis of machines;
- Prognostics and health management of mechanical systems;
- Real-time condition monitoring and anomaly detection;
- Deep learning approaches for predictive maintenance;
- Intelligent decision making for maintenance optimization;
- Predictive and forecasting techniques for equipment reliability.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Machines is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications.
Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided.
There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.9 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).