Special Issue

Trustworthy and Intelligent Systems for Machine Health Monitoring and Predictive Maintenance

Message from the Guest Editors

In modern industrial systems, continuous machinery health monitoring is essential for predictive maintenance. Real-time monitoring helps detect potential faults early and avoids unnecessary maintenance, ensuring optimal system performance. Condition-based maintenance relies on both diagnosis and prognosis. Diagnosis assesses machinery health using monitored signal data, while prognosis predicts remaining useful life based on operational profiles. Data-driven approaches, particularly machine learning and deep learning, have become prominent for their adaptability and scalability compared to physics-based models. However, reliably detecting early faults and forecasting conditions in a trustworthy and interpretable manner remains challenging. This Special Issue seeks contributions from researchers and practitioners on the latest advances in trustworthy data-driven health monitoring for intelligent machinery.

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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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