

Special Issue

Data-Driven RUL Prediction: Innovations in Generalization, Uncertainty, and Efficiency for Industrial PHM

Message from the Guest Editors

Prognostics and health management (PHM) is crucial for industrial safety and sustainability. This Special Issue seeks cutting-edge data-driven approaches for remaining useful life (RUL) prediction, addressing critical challenges including cross-domain generalization, long-term degradation extrapolation, uncertainty quantification, noise-robust multi-sensor fusion, and edge-deployable lightweight design. We invite original research leveraging emerging methodologies, such as generative trajectory modeling, physics-informed neural networks (PINNs), LLM-based transfer learning, self-data-driven paradigms, and digital twin-enabled degradation simulation. Submissions must demonstrate significant advances in prediction accuracy, robustness, or interpretability, validated in industrial applications (manufacturing, aerospace, energy, transportation, etc.). This Special Issue aims to bridge theoretical innovation with engineering reliability, fostering next-generation predictive maintenance frameworks.

Guest Editors

Dr. Diwang Ruan

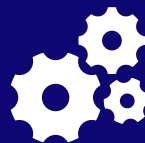
Prof. Dr. Jianping Yan

Dr. Mengdi Li

Prof. Dr. Junxing Li

Deadline for manuscript submissions

28 February 2026



Machines

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 4.7

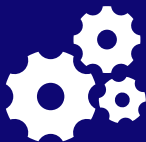


mdpi.com/si/245304

Machines
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
machines@mdpi.com

[mdpi.com/journal/
machines](https://mdpi.com/journal/machines)





Machines

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 4.7



[mdpi.com/journal/
machines](https://mdpi.com/journal/machines)



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.

Editor-in-Chief

Prof. Dr. Antonio J. Marques Cardoso
CISE - Electromechatronic Systems Research Centre, University of
Beira Interior, Calçada Fonte do Lameiro, P-6201-001 Covilhã, Portugal

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, and other databases.

Journal Rank:

JCR - Q2 (Engineering, Mechanical) / CiteScore - Q1
(Control and Optimization)

Rapid Publication:

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).