# Special Issue

# Digital Twins Applications in Manufacturing Optimization

**Message from the Guest Editors**

In recent years, Digital Twin (DT) technology has emerged as a transformative force, reshaping the landscape of manufacturing optimization across various industries. This innovative technology has opened new horizons for predictive maintenance, Machine Learning (ML) and Deep Learning (DL) applications, modeling and simulation techniques, reference architectures, big data-driven strategies, and the integration of IoT and edge architectures in the smart manufacturing sector. This special issue aims to explore the dynamic evolution of DT applications in the context of manufacturing optimization and beyond. Moreover, we will delve into the intricacies of ML and DL techniques, modeling and simulation advances, reference architectures for optimizing manufacturing processes, the role of big data in predictive maintenance, and the synergy between IoT and edge architectures in the era of Industry 4.0. I/We look forward to receiving your contributions. **Keywords**

- digital twins
- smart manufacturing
- predictive maintenance
- modeling and simulation
- IoT edge architecture
- machine learning

**Guest Editors**

Dr. Lelio Campanile

Dr. Laura Verde

Dr. Stefano Marrone

**Deadline for manuscript submissions**

28 February 2026


**Machines**

**an Open Access Journal by MDPI**

**Impact Factor 2.5**
**CiteScore 4.7**

mdpi.com/si/190322

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

mdpi.com/journal/machines

# Machines

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 4.7

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).