Special Issue

Leveraging Advanced AI for Smart and Sustainable Industry 4.0 Solutions

Message from the Guest Editors

The emergence of Industry 4.0 marks a transformative era in manufacturing, characterized by the integration of advanced technologies such as artificial intelligence (AI), the Internet of Things (IoT), and cyber physical human systems. This Special Issue focuses on the latest advancements in AI technologies, including federated learning, explainable AI, and distributed AI, and their applications in modern manufacturing processes. Our aim is to explore how these technologies can enhance efficiency, innovation, and sustainability in manufacturing industries. Topics of interest include, but are not limited to, the following:

- Federated Learning in Smart Manufacturing;
- Explainable AI for Quality Control and Predictive Maintenance;
- Distributed AI for Real-Time Process Optimization;
- IoT-Enabled Smart Factories;
- Cyber Physical Human Systems and Their Role in Industry 4.0;
- Robotics and Automation in Manufacturing;
- Big Data Analytics for Manufacturing Intelligence;
- Human–AI Collaboration in Production Environments;
- Advanced Manufacturing Technologies for Customization and Flexibility;
- Case Studies and Practical Applications of AI in Manufacturing.

Guest Editors

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Deadline for manuscript submissions

25 August 2025

About the Journal

Message from the Editor-in-Chief

Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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