Special Issue

AI-Enabled Smart Sensors for Industry Monitoring and Fault Diagnosis

Message from the Guest Editors

The advent of Industry 4.0 demands intelligent, reliable, and real-time monitoring solutions for complex industrial systems. This Special Issue focuses on the transformative integration of Artificial Intelligence (AI) with smart sensor technologies to revolutionize industrial monitoring and fault diagnosis. We seek high-quality research addressing the design, deployment, and application of AI-driven smart sensors capable of acquiring, processing, and interpreting complex data streams autonomously or at the edge. Topics of interest include, but are not limited to, the following:

- Advanced sensing technologies with embedded AI capabilities;
- Novel AI algorithms for sensor data analysis, anomaly detection, and predictive maintenance;
- Application of AI-driven smart sensors;
- Edge AI/edge computing;
- Deep learning for sensing;
- Explainable AI (XAI) for industry;
- Industrial IoT (IIoT) monitoring.

This Issue aims to showcase cutting-edge research bridging sensor technology, AI, and industrial engineering to enhance operational efficiency, safety, and reliability through proactive fault diagnosis and intelligent monitoring. Original research and review articles are invited.

Guest Editors

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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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