Special Issue

Artificial Intelligence in Industrial Systems: From Data Acquisition to Intelligent Decision-Making

Message from the Guest Editors

This Special Issue explores the transformative role of Artificial Intelligence (AI) in addressing real-world industrial challenges across the data lifecycle—from acquisition to actionable insights. Beyond prediction and automation, AI's integration with sensors, edge devices, and industrial networks enables intelligent decision-making, real-time optimization, and adaptive control in complex environments. We welcome contributions applying AI in manufacturing, energy, logistics, transportation, and smart infrastructure. Topics include AI-driven sensor data acquisition, fusion, real-time processing, anomaly detection, fault diagnosis, process optimization, and predictive maintenance. We encourage interdisciplinary research that highlights successful applications while addressing challenges like data sparsity, model robustness, and integration with legacy systems. This Special Issue aims to bridge theory and practice, focusing on applied AI research that delivers measurable improvements in industrial performance, supporting the broader goals of Industry 4.0 and digital transformation.

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