Special Issue

Sensor-Enhanced Machine Learning for Complex System Optimization

Message from the Guest Editor

The rapid growth of intelligent sensing technologies and machine learning (ML) is revolutionizing the design and optimization of complex systems across industries. As real-world systems grow in complexity, such as autonomous vehicles, energy infrastructures, smart factories, and medical devices, integrating real-time sensor data with ML models becomes essential for robust performance, adaptive control, and predictive maintenance. This Special Issue aims to showcase the latest advances in sensor-enhanced ML techniques applied to the optimization of complex systems. We welcome original research, review articles, and case studies that explore novel algorithms, architectures, and applications at the intersection of sensor networks, edge computing, machine learning, and system control/optimization. The issue encourages interdisciplinary contributions bridging telecommunications, mechanical engineering, artificial intelligence, and cyber–physical systems. The topics are not limited to: complex system; optimization system; control/optimization; machine learning; reinforcement learning; cyber–physical systems; Internet of Things; digital twin; smart sensors; sensor network; edge computing

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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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