Special Issue

Knowledge-Informed Machine Learning for Sensor-Driven Decision Making in Manufacturing

Message from the Guest Editors

With the arrival of Industry 5.0, real-time data-driven decision making has become a widespread and highly effective business model in manufacturing. To enable this production paradigm, advanced multimodal sensing technologies have become deeply integrated into manufacturing operations over the past quarter century, resulting in significantly increased manufacturing data volume, variety, veracity, and velocity, which pose unique challenges to practitioners seeking to extract actionable information from the increasingly complex shop floor data streams. In manufacturing, such domain knowledge mainly consists of physical laws, qualitative and empirical knowledge, and platform or sensor-specific constraints. To mitigate the risk of this spuriousness developing in manufacturing inference models, knowledge-informed machine learning (KIML) is being increasingly used, although there are many unsolved research gaps across myriad manufacturing applications. This Special Issue invites original research and review articles on recent advancements in KIML that apply to various manufacturing processes, along with manufacturing sensing strategies and technologies that KIML has improved.

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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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