

Special Issue: AI and Machine Learning for Manufacturing
IISE Transactions: Focused Issue on Design and Manufacturing

As a trend of future manufacturing, consumer demand increasingly shifts to personalization, customization, and consumer-maker co-creation. Intertwined with these changing demands, rapid technology advances in new manufacturing technologies, Internet of Things (IoT), robotics, AI and machine learning methods, have significantly expanded, and are continually expanding manufacturing capability, utility, and accessibility. Manufacturing processes and systems have become more connected, intelligent, agile, and collaborative. The special editor team senses that we are right now at a critical juncture of the manufacturing revolution. *IISE Transactions Design and Manufacturing Focused Issue* is hereby organizing a special issue to capture this moment and capitalize this opportunity. This special issue has two primary objectives: (a) showcase how the AI and machine learning methods have reshaped the landscape of manufacturing in its research and practice; and (b) bring a community of researchers in multiple disciplines to establish new theories, methodologies, and tools to enable smart and intelligent manufacturing by taking full advantage of the recent AI and machine learning innovations.

The topics include, but will not be limited to the following:

- AI methodologies for manufacturing
- Cybersecurity for manufacturing
- Digital twins for manufacturing
- Fabrication-aware machine learning
- Human-robot collaborative manufacturing
- Intelligent manufacturing machines or processes (e.g., smart 3D printers)
- Intelligent manufacturing systems
- Intelligent maintenance for manufacturing
- Machine learning enabled in-process quality improvements methods
- Machine learning enabled design optimization
- Machine learning-based collaborative manufacturing
- Manufacturing-as-a-Service (MaaS)
- New anomaly detection algorithms with limited supervision.
- New advances in cyber-physical manufacturing systems and Industry 4.0
- Novel manufacturing such as space manufacturing
- Physical model-guided machine learning for manufacturing
- Smart monitoring and control of manufacturing
- Smart sensing and IoT for manufacturing

Papers must be submitted through <http://mc.manuscriptcentral.com/iietransactions> and prepared according to the journal's [Instructions for authors](#). Select "Special Issue" for the question "Please select the Focus Issue to which the paper is most related" at Step 1 in the submission process, and select the specific special issue at Step 6. We highly encourage authors to submit abstracts to the lead editor (qiang.huang@usc.edu) in order for the editorial team to provide feedback on the submission and to facilitate a timely review of the full paper.

Important Dates

- (Encouraged) Abstract Submission: 3/31/2022
- Manuscript submission: 6/30/2022
- Completion of 1st round review: 9/30/2022
- Completion of 2nd round review: 1/31/2023
- Final manuscript submission: 3/1/2023
- Tentative publication date: 7/2023

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