Call for Papers
IEEE Transactions on Automation and Science Engineering
Special Issue on Artificial Intelligence-Driven Scheduling for Manufacturing, Transportation and Logistics

I. Aims and Scope

With the accelerating convergence of digitalization and intelligent technologies, the manufacturing, transportation, and logistics industries are undergoing unprecedented structural transformation. The integration of Artificial Intelligence (AI) has not only enabled system automation and enhanced collaboration, but also fundamentally reshaped operational models and decision-making frameworks across these industries. Currently, the industries have deployed AI-enabled intelligent monitoring and dynamic optimization systems, utilizing real-time data to automatically make management decisions, thereby enhancing operational efficiency while reducing energy consumption and resource waste.

AI technologies offer substantial support for addressing computationally intensive scheduling challenges in manufacturing, transportation, and logistics, facilitating the transition from experience-driven decision-making to data-driven intelligent optimization and decision-making. Representative approaches, e.g., machine learning, deep learning, reinforcement learning, swarm intelligence, and generative AI, have been applied to promote integration and innovation of smart manufacturing, transportation, logistics, and supply chains. These advances represent promising frontiers for continued innovation. It is essential for researchers and practitioners to keep pace with the latest advancements and contribute to the expanding knowledge based on AI's applications to intelligent scheduling in these critical industries.

This special issue aims to present the latest research on AI-driven scheduling in advanced manufacturing, transportation, logistics, and supply chain. It concentrates on AI applications in resolving complex scheduling challenges, encompassing resource integration, routing optimization, and network design for manufacturing, transportation, and logistics. Particular attention is devoted to the integration of AI algorithms with conventional operations research models, as well as system modelling, solution methodologies, and deployment of data-driven intelligent decision-making in complex highly-constrained multi-level dynamic environments.

II. Topics

We encourage the submission of original papers on topics of interest in this special issue, including but not limited to the following topics:

1. Theoretical Foundations and Algorithms:
- Novel AI-driven scheduling algorithms
- AI-driven multi-objective and multi-task scheduling
- Ensemble AI-based models and algorithms with mathematical optimization for scheduling
- AI-guided meta-heuristics for scheduling
- AI-assisted hyper-heuristics for scheduling
- Generalization performance measurement and improvement of AI-driven scheduling methods
- Large language model-assisted scheduling models and algorithms

2. Real-World Applications:
- AI-driven scheduling and routing optimization for autonomous systems in manufacturing, transportation, and logistics
- Using AI for human-machine collaborative scheduling
- Applications of AI in dynamic and uncertain scheduling in transportation and logistics
- Implementation of AI for real-time scheduling in manufacturing, transportation, and logistics
- Applications of AI in supply chain and transportation network designs
- AI-driven scheduling strategies for sustainable development
- AI-driven scheduling in manufacturing and supply chains

III. Submissions

All papers are to be submitted through the IEEE's Manuscript Central for Transactions on Automation Science and Engineering http://mc.manuscriptcentral.com/t-ase. Please select the Manuscript Category "Special Issue" under "Type" in Step 1 and this specific Special Issue in Step 6 of your article's submission process. **All manuscripts must be prepared according to the double-blind-review policy and IEEE Transactions on Automation Science and Engineering publication guidelines** (http://www.ieee-ras.org/publications/t-ase)**.** Please address inquiries to fuyaping@qdu.edu.cn.

VI. Important Dates

Submission Deadline:	Aug. 30, 2026
Revision Deadline:	Nov. 30, 2026
Final Decision:	Jan. 30, 2027
Publication Date:	March 2027

V. Guest Editors

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