Call for Papers

Special Issue on "Artificial Intelligence for Next Generation Industrial Cyber-Physical Systems"

Industrial Cyber-Physical Systems (ICPS) is the technological core of the new generation of the industrial revolution. It can effectively collect, analyze and use data and information from heterogeneous physical equipment so that it can continuously and effectively manage, supervise and control the physical infrastructure of the real world. ICPSs also pose fundamental challenges in multiple aspects, such as heterogeneous data generation, efficient data sensing and collection, real-time data processing, and greater request arrival rates. The big and heterogeneous industrial data are changing the future of the ICPS, which should be processed with advanced data management and analytics models. Many of these difficult problems can be solved by Artificial Intelligence (AI) technologies. It can automate and improve a wide range of industrial activities and operations via AI technologies such as geospatial intelligence, deep learning, data visualization, big data analytics. Therefore, with advanced techniques, AI can be a promising approach to realize automatic intelligence to achieve the most efficient industrial operation.

Although some attempts have been done to explore AI for next-generation ICPS, there exist various scientific and engineering challenges including software and hardware development, computational complexity, data multi-source heterogeneity, and privacy protection. This special issue aims to solicit high-quality original papers, which address the cutting-edge theories, models, and applications for next-generation ICPS, supported by AI technologies.

- AI based technologies and applications for ICPS
- AI based security, integrity and privacy solutions for ICPS
- AI based 5G communication for ICPS
- AI based intrusion detection/prevention techniques
- AI based physical layer design techniques for ICPS
- AI based 5G communication for ICPS
- AI based energy-aware industrial management solutions
- AI for smart city/grid/healthcare
- AI based architectures, designs and applications for smart factory
- AI based recommender systems leveraging ICPS
- AI based advanced data analytics for cloud-integrated ICPS
- Applying AI to industrial scenarios

Submission Guidelines: Submitted articles must not have been previously published or currently submitted for publication elsewhere. All submissions are subject to the IEEE System Journal's peer-review procedures. The journals must be submitted online at https://mc.manuscriptcentral.com/ieee-sj. The author guidelines can be found at https://ieeesystemsjournal.org/authorinstructions/. Select the paper type "SI: Artificial Intelligence for Next Generation Industrial Cyber-Physical Systems" upon submission to ensure that the article is considered for this special issue.

Important Deadlines

First submission deadline: December 30, 2022
Revision submission deadline: April 30, 2023
Notification of final decision deadline: July 30, 2023
Final manuscript (camera ready) submission deadline: August 30, 2023
Issue of Publication: December 2023 (Expected)

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