AI-enabled system learning and optimization for production and service improvement (Code: h4914)

Goal:

The IoT technologies, which allow a variety of devices of a complex system to work and share information together, have been pervasively exploited in many modern industrial fields including intelligent manufacturing, smart healthcare, and smart cities. The established data-rich platform supported by these technologies provides us a great opportunity to improve the engineering and service system performance but also raise a challenge that how to efficiently harness the acquired data. As one of the mainstreams in data science in recent years, artificial intelligence (AI) has shown a great potential to improve the system performance by acquiring knowledge from the platform.

In this special session, the organizers focus on the recent progress in system performance improvement from a perspective of production and service operations, and attempt to collect the state-of-the-art researches with innovative machine learning and AI technologies for system and service improvement. By sharing the innovative ideas in this session, it is believed that the data analytical and system optimization tools powered by AIs and machine learning techniques can promote the development of engineering and service system automation both at academical and industrial levels.

Topics:

- Interpretable AI and Machine Learning Technologies
- Knowledge-infused Data Analytical Methods for Quality and Reliability
- AI-enabled Operation and Maintenance Optimization
- Process Anomaly Detection and Diagnosis
- Data-oriented Intelligent Manufacturing
- Online Industrial Process Monitoring
- AI-enabled Energy and Transportation Systems
- Other Industrial Applications of AI technologies

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