Call For Papers

IEEE BigDataService 2023 – The 9th IEEE International Conference on
Big Data Computing Service and Machine Learning Applications
Athens, Greece, July 17-20, 2023

Workshop on Data-driven Intelligence and Services for Smart Manufacturing

I. Summary of the special session

The volume of data collected in manufacturing is growing. Big data offers a tremendous opportunity in the transformation of today's manufacturing paradigm to smart manufacturing. Smart manufacturing aims to convert data acquired across the product lifecycle into manufacturing intelligence in order to yield positive impacts on all aspects of manufacturing. Data-driven intelligence and services use artificial intelligence and machine learning tools to analyze and transform massive data into intelligent data insights, which can then be used to improve services and decision making.

Despite data-driven intelligence and services have attracted a lot of attention in intelligent manufacturing, researchers still have many challenges to explore. For example, many problems in machine design lack explicit optimization objectives or are computationally expensive in objective evaluation, resulting in difficulty of achieving a good design. Machine learning approaches have been applied to assist in optimization, which is called data-driven optimization. Model management techniques still play a significantly important role in data-driven optimization. In addition, securing big data techniques, such as secure computations, validation of inputs from endpoints, and privacy-preserving data analytics, plays a significantly important role in guarding both the data and analytics processes against attacks, theft, or other malicious activities that could harm or negatively affect them. Furthermore, data-driven decision making is beneficial to mitigate bias in decisions, avoid fault diagnosis and operation, improve services, and reduce expenses. Finally, the application problems for verifying the efficiency and effectiveness of different approaches are also indispensable.

This workshop aims to promote research on data-driven intelligence and services for smart manufacturing. Thus, this workshop will be of interest to a wide range of CISOSE participants.

II. Scope and Topics

The topics of this workshop include but are not limited to the following topics:

- Data-driven computational intelligence for smart manufacturing
- Big data analytics in product lifecycle
- Data mining in manufacturing
- Deep learning services in the product lifecycle
- Reliable federated learning on manufacturing data
- Intelligent scheduling in manufacturing
- Block chain
- Data-driven industrial diagnosis
- Data-driven industrial forecasting
- Data-driven decision making for smart manufacturing
- Data-driven industrial digitalization
- Real world data-driven industrial applications

III. Important Dates

Full paper submission: **May 20th, 2023**

IV. Submission

Papers should be submitted online through the manuscript submission system:
https://ieeebigdataservice.com/paper-submission/

V. Organizers:

- Prof. Gang Xie, Shanxi Key Laboratory of Advanced Control and Equipment Intelligence, Taiyuan, Shanxi, 030024 China
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