Industrial Intelligence Towards Digital Twin (Code: 8997e)

Goal:

The deep integration of new-generation information technology and artificial intelligence with the manufacturing industry is the core of intelligent manufacturing. However, the increasingly complex and variable manufacturing activities and massive heterogeneous industrial data hinder manufacturing cyber-physical interaction and integration. When faced with industrial data characteristics such as high noise, multi-modality, and small samples, how to develop industrial intelligence approaches for digital twins has become the key to tackling the difficulties listed above. However, current artificial intelligence' low interpretability and cognitive ability have introduced new obstacles. Therefore, this special session calls for fundamental scientific advancements on industrial intelligence toward digital twins.

Topics:
We are particularly interested in breakthroughs in the following aspects:

- Data, models and methods of industrial intelligence for digital twin
- Visual understanding of digital twin
- Time series anomaly detection for digital twin
- Semantic extraction and understanding in digital twin
- Knowledge discovery for digital twin
- Decision support applications for digital twin
- Representation learning and fusion network for digital twin
- Domain knowledge graph construction for digital twin
- Explainable intelligence for digital twin
- Lightweight neurol network and its edge computing for digital twin
- Cognitive digital twin

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