

## *Intelligent analysis of industrial big data (Code: 4xqs4)*

### **Goal:**

With the rapid development of sensing and IoT, volume data have been generated and collected in the manufacturing system, and industrial big data have become a trend towards intelligent manufacturing. Industrial big data contain much useful and valuable information, and this information can promote the operating efficiency of the manufacturing system greatly by intelligent analyzing and deciding. However, due to the several challenges, such small-size-sample, imbalanced samples and noise, extracting the valuable information from the industrial big data is quite difficult. And the analysis accuracy cannot meet the demand of the modern manufacturing systems.

Recently, artificial intelligence (AI), especially the deep learning, has made the great breakthroughs for data analysis. These advanced technologies can provide more accurate and applicate analysis results, which have shown the potential for the industrial big data. And developing the new AI-based methods for the data analysis and decision in the full-life-circle, such as design, manufacturing, and maintain, is quite important for the manufacturing system. Hence, this special session welcomes the original research work on AI-based methods for industrial big data analysis and decision, and the topics of this issue include but not limited to:

### **Topics:**

- New techniques for industrial big data cleaning and pre-processing
- Multi-source data feature representation and visualization
- Knowledge graph and correlation analysis for industrial big data
- AI-based data analysis methods for small-size-sample
- AI-based data analysis methods for imbalanced samples
- Knowledge transfer for industrial big data
- Multi-tasks learning for manufacturing system decision
- Reinforcement/meta learning for the self-adaptive decision making
- Federated learning for the security-sensitive data analysis
- Human machine collaborative for data analysis and decision making
- .....

### **Contact the lead organizers:**

**Dr. Xinyu Li, rofessor**

Huazhong University of Science and Technology

E-mail: [lixinyu@hust.edu.cn](mailto:lixinyu@hust.edu.cn)

Phone: +86 15972128878