

# Proposal for Special Session at IEEE CASE 2021

## Goal:

- Machine Learning has recently become a power-engine transforming various manufacturing research and applications. In the era of Smart Manufacturing and I4.0, the abundance of smart sensors and industrial internet of things has made manufacturing systems a data-rich environment. ML techniques play a significant role in uncovering fine-grained complex production patterns and offering timely decision support in a wide range of applications, to name a few, robotics and human-machine interaction, predictive maintenance, process optimization, task scheduling, quality improvement, and security. This special session aims to harvest the latest efforts in theoretical as well as experimental aspects of machine learning and their applications, particularly in smart manufacturing.

**Session Title:** [Advances of Machine Learning for Smart Manufacturing]

**Organizers:** [Ying Liu], [Reader in Intelligent Manufacturing]  
[Cardiff University]  
E-mail: [LiuY81@cardiff.ac.uk]  
Phone: +[44] – [2920874696]

[Li Li], [Professor of Automation and Control]  
[Tongji University]  
E-mail: [lili@tongji.edu.cn]  
Phone: +[86] – [18916087269]

[Dazhong Wu], [Assistant Professor]  
[University of Central Florida]  
E-mail: [ dazhong.wu@ucf.edu]  
Phone: +[1] – [407-823-1561]

[Kuo-Yi Lin], [Associate Professor]  
[Tongji University]  
E-mail: [19603@tongji.edu.cn]  
Phone: +[86] – [18916087269]

[Yuqian Lu], [Lecturer in Smart Manufacturing]  
[University of Auckland]  
E-mail: [yuqian.lu@auckland.ac.nz]  
Phone: +[64] – [99231584]

[Xin Guo], [Associate Professor]  
[Sichuan University]  
E-mail: [guoxin@scu.edu.cn]  
Phone: +[86] – [28-85405307]

[Junliang Wang], [Assistant Professor]  
[Donghua University]  
E-mail: [junliangwang@dhu.edu.cn]  
Phone: +[86] – [17612166230]

**Contributions:**

1. “Deep Learning for Cold Rolling Process Modelling and Analysis” by Zheyuan Chen, Ying Liu, et al.
2. “Deep Learning for Fleet Predictive Maintenance with GID Features” by Chong Chen, Ying Liu, et al.
3. “A Smart Ensemble Approach for AM Energy Modelling and Analysis” by Fu Hu, Ying Liu, et al.
4. “Deep Learning for Semiconductor Production Modelling and Line Balancing” by Junya Tang, Li Li, et al.
5. “Machine Learning for Semiconductor Production Quality Improvement” by Qingyun Yu, Li Li, et al.
6. “Prediction of Material Removal Rate in AM Using Decision Tree-Based Ensemble Learning” Z Li, DZ Wu, et al.
7. “Machine Learning in Digital-twin for Smart Manufacturing” by YQ Lu, X Xun, et al.

.....