Zhengang Guo

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Biography

Zhengang Guo (B.Eng.'15, Ph.D.'21) is currently a Ph.D. student of the Department of Electrical and Electronic Engineering at Imperial College London (supervised by Dr. Wei Dai and Prof. Bruno Clerckx, FIEEE, FIET), London, UK. He received the B.Eng. and Ph.D. degrees in mechatronic engineering from Northwestern Polytechnical University (supervised by Prof. Yingfeng Zhang), Xi'an, China, in July 2015 and June 2021, respectively. From September 2018 to September 2020, he was a joint Ph.D. student at Cardiff University (supervised by Prof. Jianzhong Wu), Cardiff, UK. He has authored 8 peer-reviewed international research papers. His research interests include super-resolution, nonconvex optimization, wireless communications, smart manufacturing, complex network modeling and optimization, smart supply chain collaboration and optimization. He serves as a peer reviewer for the IEEE Transactions on Industrial Informatics, the IEEE Transactions on Intelligent Transportation Systems, the IEEE Intelligent Transportation Systems Magazine, and Applied Energy.

Education

- **Ph.D., Electrical and Electronic Engineering**

  January 2020 - , Communications and Signal Processing (CSP) Group, Department of Electrical and Electronic Engineering (EEE), Imperial College London, London, UK

  Supervisors: Dr. Wei Dai, Prof. Bruno Clerckx, FIEEE, FIET

- **Ph.D., Mechatronic Engineering**

  September 2015 - June 2021, Department of Industrial Engineering, School of Mechanical Engineering, Northwestern Polytechnical University, Xi'an, China

  Supervisor: Prof. Yingfeng Zhang

- **Joint Ph.D. (Non Degree), Electrical and Electronic Engineering**

  September 2018 - September 2020, Centre for Integrated Renewable Energy Generation and Supply (CIREGS), School of Engineering, Cardiff University, Cardiff, UK

  Supervisor: Prof. Jianzhong Wu

- **B.Eng., Mechatronic Engineering**

  September 2011 - July 2015, Department of Industrial Engineering, School of Mechanical Engineering, Northwestern Polytechnical University, Xi'an, China

Supervisor: Prof. Yingfeng Zhang

Research Interests

- Super-Resolution, Nonconvex Optimization, and Wireless Communications
- Smart Manufacturing, Complex Network Modeling and Optimization
- Smart Supply Chain Collaboration and Optimization

Research Projects

Primary Participant

- **Data-Knowledge Hybrid Driven Self-Adaptive Collaborative Optimal Control Approach and Its Application Verification for Discrete Manufacturing Systems**

  Grant No. U2001201, Key Program Supported by National Natural Science Foundation of China, January 2022 - December 2024

- **Research and Demonstration Application of Network Collaborative Manufacturing Integration Technology for Customized Production of Rail Transit Equipment**

  Grant No. 2018YFB1703400, National Key R&D Program Supported by Ministry of Science and Technology of China, June 2019 - May 2022

- **Signal Sensing, Design and Delivery for Electronic Warfare (Joint ICL-UCL Consortium, UDRC Consortium (UEDIN), and DSTL)**

  Grant No. EP/S026657/1, Supported by MOD & Engineering and Physical Sciences Research Council (EPSRC), Value £520,757, April 2019 - March 2022

- **Research on Self-Adaptive Collaborative Optimization Approach of Smart Production-logistics Systems Based on CPS and Industrial Internet of Things**

  Grant No. 51675441, General Program Supported by National Natural Science Foundation of China, January 2017 - December 2020

Principal Investigator

- **Innovative Design of Smart Equipment Based on CPS**

  Grant No. G2017KY0407, Supported by Northwestern Polytechnical University， January 2017 - December 2018

Membership

- Graduate Student Member, IEEE
- Graduate Student Member, IEEE Power & Energy Society

Academic Services

Conference Organization

- Organizing Committee Member, The 19th International Manufacturing Conference in China (IMCC) 2021

- Oral Session Chair, The Sino-German Forum on Manufacturing (SGFM) 2021

Peer Reviewer in Journals

- IEEE Transactions on Industrial Informatics
- IEEE Transactions on Intelligent Transportation Systems
- IEEE Intelligent Transportation Systems Magazine
- Applied Energy

Awards

- **Outstanding Ph.D. Graduate**
  Awarded by Northwestern Polytechnical University, March 2022
- **Huawei Scholarship**
  Awarded by Northwestern Polytechnical University & Huawei Technologies Co., Ltd, November 2020
- **Hexagon First-Class Scholarship**
  Awarded by Northwestern Polytechnical University & Hexagon AB, November 2017
- **Outstanding Graduate Scholarship/First-Class Academic Scholarship**
  Awarded by Northwestern Polytechnical University, October 2017
- **Outstanding Student Scholarship**
  Awarded by Northwestern Polytechnical University, October 2014
- **Excellence Award of National Innovation and Entrepreneurship Program**
  Awarded by Ministry of Education of China, May 2014

Teaching

- **EE4.07 Coding Theory (40 hours, Dr. Wei Dai)**
  Graduate Teaching Assistant, Department of Electrical and Electronic Engineering, Imperial College London, October 2022 - December 2022
- **EE4.66 Topics in Large Dimensional Data Processing (50 hours, Dr. Wei Dai)**
  Graduate Teaching Assistant, Department of Electrical and Electronic Engineering, Imperial College London, October 2021 - December 2021
- **EE4.66 Topics in Large Dimensional Data Processing (40 hours, Dr. Wei Dai)**
  Graduate Teaching Assistant, Department of Electrical and Electronic Engineering, Imperial College London, October 2020 - December 2020

Publications

Google Scholar Citation = 361, h-index = 5, i10-index = 4.

Note: * corresponding authorship.

1. **Z. Guo**, Y. Zhang*, S. Liu, X. V. Wang and L. Wang, "Exploring self-organization and self-adaption for smart manufacturing complex networks", ***Frontiers of Engineering***

Management, Nov. 2022, doi: 10.1007/s42524-022-0225-1. **(SCI, Cover Paper of the Special Issue on Industrial Engineering and Smart Manufacturing, Sponsored by the Chinese Academy of Engineering)**

2. **Z. Guo**, Y. Zhang*, X. Zhao and X. Song, "CPS-Based Self-Adaptive Collaborative Control for Smart Production-Logistics Systems", ***IEEE Transactions on Cybernetics***, vol. 51, no. 1, pp. 188-198, Jan. 2021, doi: 10.1109/TCYB.2020.2964301. **(SCI, Top, IF = 19.118, ESI Highly Cited Paper)**
3. **Z. Guo**, Y. Zhang*, J. Lv, Y. Liu and Y. Liu, "An Online Learning Collaborative Method for Traffic Forecasting and Routing Optimization", ***IEEE Transactions on Intelligent Transportation Systems***, vol. 22, no. 10, pp. 6634-6645, Oct. 2021, doi: 10.1109/TITS.2020.2986158. **(SCI, Top, IF = 9.551)**
4. Y. Zhang*, **Z. Guo**, J. Lv and Y. Liu, "A Framework for Smart Production-Logistics Systems Based on CPS and Industrial IoT", ***IEEE Transactions on Industrial Informatics***, vol. 14, no. 9, pp. 4019-4032, Sept. 2018, doi: 10.1109/TII.2018.2845683. **(SCI, Top, IF = 11.648)**
5. Y. Zhang*, **Z. Guo**, C. Qian and R. Li, "Investigation on Process-aware Based Intelligent Modeling of Bottom Layer Manufacturing Resources and Self-adaptive Collaborative Optimization Methodology", ***Journal of Mechanical Engineering***, vol. 54, no. 16, pp. 1-10, Aug. 2018, doi: 10.3901/JME.2018.16.001. **(EI(JA), Cover Paper of the Special Issue on the Internet of Manufacturing Things and Smart Manufacturing Service Technology)**
6. **Z. Guo**, Y. Zhang*, X. Zhao and X. Song, "A Timed Colored Petri Net Simulation-Based Self-Adaptive Collaboration Method for Production-Logistics Systems", ***Applied Sciences***, vol. 7, no. 3, pp. 235, Mar. 2017, doi: 10.3390/app7030235. **(SCI, IF = 2.838)**
7. Y. Liu*, M. Yang and **Z. Guo**, "Reinforcement learning based optimal decision making towards product lifecycle sustainability", ***International Journal of Computer Integrated Manufacturing***, vol. 35, no. 10-11, pp. 1269-1296, Jan. 2022, doi: 10.1080/0951192X.2022.2025623. **(SCI, IF = 4.420)**
8. O. Tang, Y. Liu*, **Z. Guo** and S. Wei, "Refund policies and core classification errors in the presence of customers' choice behaviour in remanufacturing", ***International Journal of Production Research***, vol. 59, no. 12, pp. 3553-3571, Mar. 2021, doi: 10.1080/00207543.2021.1894498. **(SCI, Top, IF = 9.018)**

References

1. Dr. Wei Dai, Communications and Signal Processing Group, Department of Electrical and Electronic Engineering, Imperial College London, London, UK. E-mail: wei.dai1@imperial.ac.uk
2. Prof. Bruno Clerckx, Communications and Signal Processing Group, Department of Electrical and Electronic Engineering, Imperial College London, London, UK. E-mail: b.clerckx@imperial.ac.uk
3. Prof. Yingfeng Zhang, Department of Industrial Engineering, School of Mechanical Engineering, Northwestern Polytechnical University, Xi'an, China. E-mail: zhangyf@nwpu.edu.cn
4. Prof. Jianzhong Wu, Centre for Integrated Renewable Energy Generation and Supply, School of Engineering, Cardiff University, Cardiff, UK. E-mail: wuj5@cardiff.ac.uk