Jianguo Wu

Assistant Professor
Dept. of Industrial Engineering and Management,
Peking University
http://www2.coe.pku.edu.cn/faculty/wujianguo/index.html

EDUCATION

Ph.D.	Industrial & Systems Engineering, UW-Madison Advisor: Shiyu Zhou	08/2015
M.S.	Statistics, University of Wisconsin-Madison	05/2014
M.S.	Mechanical Engineering, Purdue University Advisor: Ashlie Martini	05/2011
B.S.	Mechanical Engineering & Automation, Tsinghua University	07/ 2009

EMPLOYMENT

Peking University, Dept. of Industrial Engineering and Management — 12/2017-present
Assistant Professor

University of Texas at El Paso — 08/2015-12/2017
Assistant Professor (tenure track),
Dept. of Industrial, Manuf. and Systems Engineering (primary)
Dept. of Electrical & Computer Engineering (affiliated)
Computational Science Program (affiliated)

University of Wisconsin-Madison, Industrial and Systems Engineering — 09/2011-08/2015
Graduate Research Assistant

Purdue University, School of Mechanical Engineering — 09/2009-05/2011
Graduate Research Assistant

RESEARCH INTERESTS

My research focuses on engineering-informed machine learning and data analytics for intelligent manufacturing and complex systems.

- Data analytics for manufacturing system improvement: metal matrix nanocomposites fabrication; 3D printing, steel manufacturing; quality characterization and quantification; nondestructive inspection; modeling, monitoring and analysis for quality control and process improvement.
- Data-driven fault detection, diagnostics and prognostics of complex systems: integration of machine learning, statistical modeling and reliability theory for anomaly detection, diagnostics and prognostics of smart and connected systems, e.g., aero-engines.
- Data analytics methodology development: deep learning; online change-point detection; steady-state detection; Bayesian inference; state-space models; sequential Monte Carlo techniques; high-dimensional data fusion and monitoring; Gaussian process

HONORS AND AWARDS

- P&G Faculty Fellowship (Only four recipients each year at Peking University) 06/2020
  PKU Procter & Gamble Education Foundation for Excellent Faculty
- Best Organizer of Symposium and Session (BOSS) Award, 2019
  Manufacturing Science and Engineering Conference, Erie, Pennsylvania

  Featured Article in ISE Magazine 2018
- "The Thousand Talents Plan" for Distinguished Young Scholars, 2017
  the Organization Department of China
- STARS Award, University of Texas System 08/2015
- NSF Travel Grant Award, ISERC, Nashville, TN 06/2015
- Best Paper Award Finalist 06/2015
  Quality Control and Reliability Engineering (QCRE) Division of ISERC, Nashville, Tennessee
- Richard S. and Harriet K. Fein Scholarship, UW-Madison 2014-2015
- E. Wayne Kay Graduate Scholarship, 2014-2015
  Society of Manufacturing Engineers (SME)
- NSF Travel Grant Award, ISERC, Montreal, Canada 06/ 2014
- Huang Yi-Cong Couple Scholarship, *Tsinghua University* 2007
- First Prize in the 23rd National University Students Physics Competition 2006
  Society of Physics, Beijing
- First Class Scholarship for Academic Excellence (rank 2/90) 2006
  Department of Mechanical Engineering, Tsinghua University
- First Prize in Mathematical Olympic Competition 2004
  Hunan Province, China

PUBLICATIONS

Referred Journals and Transactions (* corresponding author, _graduate student supervised)

1. Ruiyu Xu, Xiaowei Yue, **Jianguo Wu***, 2020, "Online Structural Change-point Detection of High-dimensional Time Series via Dynamic Sparse Subspace Learning", submitted
2. Yuxin Wen, **Jianguo Wu***, Bill Tseng, 2020, "A Neural Network based Cox Model for Degradation Data Fusion and Failure Prediction", submitted
3. Zhen Li, **Jianguo Wu***, 2020, "An Unsupervised Neural Network for Health Index Construction and Residual Life Prediction", submitted
4. Yuanyuan Gao, **Jianguo Wu***, 2020, "Bayesian Hierarchical Modeling of Microstructural Images for Porosity Prediction of Metallic Additive Manufacturing", submitted

5. C. Lee, **Jianguo Wu**, W. Wang, X. Yue*, 2020, "Neural Network Gaussian Process considering Input Uncertainty for Composite Structures Assembly", ***IEEE/ASME Transactions on Mechatronics,*** revision ***(2020 ISERC Best Student Paper Competition Finalist)***
6. Y. Kuang, D. Das*, **Jianguo Wu**, M. Sir, K. Pasupathy, 2020, "Real-time Monitoring of Markov Chains with Application in Detecting Slowdowns in Hospital Emergency Departments", submitted
7. Zhen Li, **Jianguo Wu***, Xiaowei Yue, 2019, "A Shape Constrained Neural Data Fusion Network for Health Index Construction and Remaining Useful Life Prediction", ***IEEE Transactions on Neural Networks and Learning Systems****, revision*
8. F. Rahman, **Jianguo Wu***, B. Tseng, 2019, "Automatic Morphological Extraction of Fibers from SEM Images for Quality Control of Fiber-Reinforced Composites Manufacturing", submitted
9. X. Huang, K. Tsui, **Jianguo Wu**, Qiang Zhou*, "An Order Statistic Approach for Inference of the Size Distribution of 3D Particle Clusters in Metal Matrix Nanocomposites", submitted
10. Yuanyuan Gao, Yuxin Wen, **Jianguo Wu***, 2020, "A Neural Network Based Joint Prognostic Model for Data Fusion and Remaining Useful Life Prediction", ***IEEE Transactions on Neural Networks and Learning Systems,*** DOI: 10.1109/TNNLS.2020.2977132
11. **Jianguo Wu***, Honglun Xu, Feng Ju, Bill Tseng, 2019, "Adaptive Minimum Confidence Region Rule for Multivariate Initial Bias Truncation in Discrete-event Simulations", ***Technometrics***, pp.1-14. DOI: 10.1080/00401706.2019.1665590
12. Chen Zhang, Nan Chen, **Jianguo Wu***, 2020, "Spatial Rank-based High-dimensional Monitoring Through Random Projection", ***Journal of Quality Technology,*** 52(2), pp.111-127.
13. X. Song*, M. Shi, **Jianguo Wu**, W. Sun, 2019, "A New Fuzzy c-means Clustering-based Time Series Segmentation Approach and its Application on Tunnel Boring Machine Analysis", ***Mechanical Systems and Signal Processing,*** 133, p.106279.
14. **Jianguo Wu***, Honglun Xu, Chen Zhang, Yuan Yuan, 2019, "A Sequential Bayesian Partitioning Approach for Online Steady State Detection of Multivariate System", ***IEEE Transactions on Automation Science and Engineering,*** 16(4), pp.1882-1895.
15. Yuxin Wen, **Jianguo Wu***, Das, D., Bill Tseng, 2018, "Degradation Modeling and RUL Prediction using Wiener Process subject to Multiple Change Points and Unit Heterogeneity", ***Reliability Engineering and System Safety***. 176, pp.113-124.
16. Yuxin Wen, **Jianguo Wu***, Qiang Zhou, Bill Tseng, 2018, "Multiple Change-point Modeling and Exact Bayesian Inference of Degradation Signal for Prognostics Improvement", ***IEEE Transactions on Automation Science and Engineering,*** 16(2), pp.613-628.
17. **Jianguo Wu***, Yuan Yuan, Haijun Gong, Bill Tseng, 2018, "Inferring 3D Ellipsoids based on Cross-sectional Images with Applications to Porosity Control of Additive Manufacturing", ***IISE Transactions,*** 50(7), pp.570-583. (**featured by ISE magazine**)
18. Yuxin Wen, **Jianguo Wu***, Yuan Yuan, 2017, "Multiple Phase Modeling of Degradation Signal for Condition Monitoring and Remaining Useful Life Prediction", ***IEEE Transactions on Reliability,*** 66(3), pp.924-938.

19. **Jianguo Wu***, Yuan Yuan, Xiaochun Li, 2017, "Size Distribution Estimation of Three-dimensional Particle Clusters in Metal Matrix Nanocomposites Considering Sampling Bias", ***ASME Journal of Manufacturing Science and Engineering,*** 139(8)

20. **Jianguo Wu**, Yuhang Liu, Shiyu Zhou*, 2016, "Bayesian Hierarchical Linear Modeling of Profile Data with Applications to Quality Control of Nanomanufacturing", ***IEEE Transactions on Automation Science and Engineering,*** 13(3), pp.1355-1366.

21. Yuxing Hou, **Jianguo Wu**, Yong Chen*, 2016, "Online Steady State Detection Based on Rao-Blackwellized Sequential Monte Carlo", ***Quality and Reliability Engineering International***, 32(8), pp.2667-2683.

22. Nan Chen*, Eunshin Byon, **Jianguo Wu**, 2016, "A General Wiener Process Model for Heterogeneous Degradations based on Kriging", *Journal of Quality Technology (revision)*

23. **Jianguo Wu**, Yong Chen, Shiyu Zhou*, 2016, "Online Detection of Steady-state Operation using a Multiple Change-point Model and Exact Bayesian Inference", ***IIE Transactions***, 48(7), pp.599-613. ***(2015 ISERC QCRE Best Student Paper Competition Finalist)***

24. Yuhang Liu, **Jianguo Wu**, Shiyu Zhou*, Xiaochun Li, 2016, "Microstructure Modeling and Ultrasonic Wave Propagation Simulation of A206-Al_2O_3 Metal Matrix Nanocomposites for Quality Inspection", ***ASME Journal of Manufacturing Science and Engineering,*** 138(3)

25. **Jianguo Wu**, Yong Chen, Shiyu Zhou*, Xiaochun Li, 2016, "On-line Steady State Detection for Process Control Using Multiple Change-point Models and Particle Filters", ***IEEE Transactions on Automation Science and Engineering***, vol. 13, no. 2, pp. 688-700

26. **Jianguo Wu**, Shiyu Zhou*, Xiaochun Li, 2015, "Ultrasonic Attenuation Based Inspection Method for Scale-up Production of A206-Al_2O_3 Metal Matrix Nanocomposites", ***ASME Journal of Manufacturing Science and Engineering,*** 137(1), p.011013

27. **Jianguo Wu**, Shiyu Zhou*, Xiaochun Li, 2013, "Acoustic Emission Monitoring for Ultrasonic Cavitation Based Dispersion Process", ***ASME Journal of Manufacturing Science and Engineering*** 135(3), p.031015

28. Yalin Dong, Qunyang Li, **Jianguo Wu**, Ashlie Martini, 2011, "Friction, Slip and Structural Inhomogeneity of the Buried Interface," ***Modeling and Simulation in Materials Science and Engineering,*** 19(6), p.065003.

Peer-reviewed Conference Paper and Others

29. Honglun Xu, **Jianguo Wu***, Bill Tseng, "An efficient method for on-line identification of steady state for multivariate systems", Proceeding of ASME MSEC 2018

30. Md Fashiar Rahman, **Jianguo Wu***, Bill Tseng, "Automated Fiber Extraction from SEM images with Application to Quality Control of Fiber-reinforced Composites Manufacturing", Proceeding of ASME MSEC 2018

31. Zhonghua Hu, Bill Tseng, Yirong Lin, **Jianguo Wu***, "Hough Transform based Automatic Segmentation of Nanofibers from SEM images", *The Southwest Emerging Technology Symposium, 2016*

32. **Jianguo Wu***, Yirong Lin, Bill Tseng, "Numerical Simulation of Ultrasonic Wave Propagation in Fiber-enhanced Dielectric Nanocomposites for Quality Inspection", *The Southwest Emerging Technology Symposium, 2016*
33. **Jianguo Wu**, Ashlie Martini*, "Atomic Stick-Slip", *DOI: 10254/nanohub-r7771.1, 2009(online software used by over 400 researchers)*

GRANTS

1. "Towards High-quality Intelligent Manufacturing—Quality Science Research under Industrial Big Data Environment", National Natural Science Foundation of China (Key Program of NSFC), PI: Dr. Kaibo Wang (Tsinghua University), PI: Dr. Jianguo Wu (Peking University), Total amount funded: ￥2,860,000, Dr. Wu's portion: ￥1,430,000 (~$200K), 01/2020-12/2024
2. "End-Quench Hardenability Prediction and Control for 20CrMnTi Gear Steel Manufacturing", HBIS Shijiazhuang Iron & Steel Co., Ltd, PI: Dr. Jianguo Wu, Total amount funded: ￥460,000 ($66K), 10/2018-05/2019
3. "Online Process Monitoring and Quality Control of Additive Manufacturing based on Multiple Heterogeneous Sensors", National Natural Science Foundation of China(regular NSFC grant), PI: Dr. Jianguo Wu, Total amount funded: ￥720,000 ($103K), 01/2019-12/2022
4. The Thousand Talents Plan for Distinguished Young Scholars, the Organization Department of China, ￥2,000,000 ($300K), 2018-2021
5. "Double-first class" startup, Peking University, ￥1,000,000 ($143K), 2018-2020
6. "Double-first class" grant for equipment acquisition, Peking University, ￥2,000,000 ($285K)
7. "Advancement of Additive Manufacturing Process Monitoring and Metal Matrix Composite Fabrication", Department of the Army MSDRC Program, PI: Dr. Jianguo Wu, Co-PI: Dr. Ryan Wicker, Total amount funded: $900K, 2017-2020
8. "Ultrasonic Nondestructive Evaluation based Quality Inspection for Porosity Reduction in Metal-based Additive Manufacturing", University Research Institute Grant, University of Texas Systems. Total amount funded: $5,000, 2016
9. University of Texas Systems STARS Award, PI: Dr. Jianguo Wu, Total amount funded: $200K, 2015-2017

TEACHING

- **IEM G00333340 Applied Stochastic Models**, core graduate course, Peking University, Spring 2020
- **IEM 08617050 Design of Experiment and Data Analysis**, Graduate, Peking University, Spring 2019, overall teaching evaluation: 96/100
- **Probability and Mathematical Statistics**, Undergraduate, Peking University, Fall 2018/2019, overall teaching evaluation: 97/100

- **IE/SE/MFG 5314,** "**Robotics and Flexible Automation**", Graduate, Univ. of Texas at El Paso Fall 2016/2017
  Teaching evaluation summary: course rating 4.2/5.0, instructor rating 4.4/5.0
  Description: This is a newly developed capstone course for graduate students in the IMSE department. It has three modules in modern manufacturing enterprises: (1) the modern manufacturing processes; (2) the industrial robotics technology, robotic programming, programmable logic controllers and PLC programming; (3) nondestructive evaluation techniques for quality control.
- **MFG 5359**, "**Computer-Aided Manufacturing**", Graduate, Univ. of Texas at El Paso Spring 2016/2017
  Teaching evaluation summary: course rating 4.3/5.0, instructor rating 4.4/5.0
  Description: This is a newly developed core course for graduate students in the manufacturing program. Topics include computer aided design system, geometric modeling, coordinates transform, numerical control and NC programming, process engineering, production planning and control, material requirement planning, production scheduling, FeatureCAM, NX software etc.
- **IE/MFG 5395,** "**Introduction to Industrial Data Analytics**", senior undergraduate/graduate, Univ. of Texas at El Paso, Fall 2015/2016/2017, Spring 2017
  Teaching evaluation summary: course rating 4.6/5.0, instructor rating 4.7/5.0
  Description: This is a newly developed course for graduate and senior undergraduate students. It focuses on various data analytics techniques for both manufacturing and service enterprises. Topics include data preprocessing, principle component analysis, linear/logistic regression, clustering, classification, anomaly detection, model selection and validation, R programming, etc.

MENTOR/ADVISOR

- **Current Ph.D. Students**
  - Xinming Wang 09/2020 − present
  - Ruiyu Xu 09/2019 − present
  - Yuanyuan Gao 09/2018 − present
  - Zhen Li 09/2018 − present
  - Fashiar Rahman (UTEP, co-advisor and actual research advisor) 01/2017 − present
  - Honglun Xu (UTEP) 08/2016 − present
- **Completed PhD Students**
  - Yuxin Wen, UTEP 04/2020
    - Thesis: Multiple Change-point Modeling of Degradation Signal for Prognostics Improvement
    - Current Position: Assistant Professor, Chapman University, USA
  - Zhonghua Hu, UTEP 05/2017

- Thesis: Image Data Mining for Quality Control of Nanofiber Reinforced Piezoelectric Nanocomposites based on SEM Images (I was the **co-advisor and the actual research advisor**)
- Current Position: Bank of Shanghai, China

- **Completed MS Students**
  - Yongjun Liu, Master of Engineering Management (MEM), 06/2020
    - Thesis: Sales Forecast based on Big Data of Food Safety Platform
  - Zhixing Zhou, MEM, 06/2020
    - Thesis: Barra Multi-factor Model based Stock Return Analysis and Application
  - Yinsheng Luo, MEM, 06/2020
    - Thesis: Quality Inspection and Control of Automotive Heating and Cooling Components Based on Infrared Thermal Imaging Technology
  - Yuan Feng, MEM, 06/2019
    - Thesis: Application of Six Sigma Management in Musical Instrument Manufacturing
  - Linmei Wang, MEM, 06/2019
    - Thesis: Income Generation System of Project Based on Hall Three-dimensional Structure
  - Anabel Renteria Marquez, UTEP, 2017
    - Thesis: Risk Mitigation in the Supply Chain Caused by Multiple Phase-in and Phase-out Components Using SIMIO Simulation
  - Anand Raj, UTEP, 2017
    - Thesis: Supplier Evaluation and Selection in Automobile Industry
  - Victor Loya, UTEP, 2015
    - Thesis: A Cell Formation Algorithm for Sequential Processes with Alternative Machine Selection in the Automotive Lighting Industry
- **Completed Undergraduate Students**
  - Yanxiong Qi, Department of Mechanics, Peking University, 2020
  - Mar Del Hierro Manuel, Mechanical Engineering, UTEP, 2016

INVITED PRESENTATIONS

1. "Neural Network based Data Fusion Approaches for Condition Monitoring and Residual Life Prediction", Chinese Academy of Science, Nov 6, 2019.
2. "A Sequential Bayesian Partitioning Approach for Online Steady State Detection of Multivariate Systems", 2019 INFORMS Annual Meeting, Seattle, October 20-23
3. "Steady State Detection and Initialization Bias Truncation for Multivariate Systems", National University of Singapore, October 2-8, 2019

4. “A Sequential Bayesian Partitioning Approach for Online Steady State Detection of Multivariate Systems”, the 5th International Conference on the Interface between Statistics and Engineering, June 26-28, 2019, Seoul, South Korea
5. “A Sequential Bayesian Partitioning Approach for Online Steady State Detection of Multivariate Systems”, CASE 2018, August 20-24, 2018, Munich, Germany
6. “Adaptive Minimal Confidence Region Rule for Multivariate Initial Bias Truncation in Discrete-event Simulations”, Workshop on Simulation Analytics: Smart Simulation in Big Data Era, Peking University, June 13, 2018
7. “Towards High-quality, Reliability and Smartness of Advanced Manufacturing: Data-driven Modeling, Monitoring and Control”, Forum on Artificial Intelligence Frontiers, Peking University, Dec 23, 2017
8. “Size Distribution Estimation of 3D Particle Clusters in Metal Matrix Nanocomposites Considering Sampling Bias”, 2017 INFORMS Annual Meeting, Houston, October 22-25
9. “Multiple Phase Modeling of Degradation Signal for Condition Monitoring and Remaining Useful Life Prediction”, 13th International Conference on Automation Science and Engineering (CASE 2017), Xi’an, China, August 19-August 23, 2017
10. “Multiple Phase Modeling of Degradation Signal for Condition Monitoring and Remaining Useful Life Prediction”, 2017 IISE Annual Conference, Pittsburgh, May 23, 2017
11. “Bayesian Hierarchical Linear Modeling of Profile Data with Applications to Quality Control of Nanomanufacturing”, the fourth International Conference on the Interface between Statistics and Engineering, Palermo, Italy, June 20-22, 2016
12. “Automatic Segmentation and Inference of Nanofibers from Microscopic Images in the Fiber-reinforced Nanocomposites Manufacturing”, The Southwest Emerging Technology Symposium, April 9, 2016
13. “Numerical Simulation of Ultrasonic Wave Propagation in Fiber-enhanced Dielectric Nanocomposites for Quality Inspection”, The Southwest Emerging Technology Symposium, April 9, 2016
14. “Bayesian Hierarchical Linear Modeling of Profile Data with Applications to Quality Control of Nanomanufacturing”, INFORMS Annual Meeting, Philadelphia, Nov 03, 2015
15. “On-line Steady State Detection for Process Control using Multiple Change-point Model and Particle Filters”, TASE invited special session, INFORMS Annual Meeting, Philadelphia, Nov 01, 2015
16. “Online Steady-state Detection Using Multiple Change-point Models and Exact Bayesian Inference ”, IIE Annual Conference & Expo, ISERC, Nashville, TN, May 30-June 2, 2015
17. “Ultrasonic Attenuation Based Inspection Method for Scale-up Production of A206-Al2O3 Metal Matrix Nanocomposites”, INFORMS Annual Meeting, San Francisco, Nov 9-12, 2014
18. “Process Monitoring, Control, and Quality Inspection in the Fabrication of Ultra-High Performance Lightweight Nanocomposites”, Chinese Academy of Sciences, July 2014
19. “On-line Steady-state Detection Using Multiple Change-point Models and Particle Filters”, IIE Annual Conference & Expo, ISERC, Montreal, Canada, May 31-June 03, 2014

20. "On-line Steady-state Detection Using Multiple Change-point Models and Particle Filters", INFORMS Annual Meeting, Minneapolis, Minnesota, October 6-9, 2013
21. "Acoustic Emission Monitoring for ultrasonic Cavitation based Casting of Metal-matrix Nanocomposites", NIST TIP Project Semi-Annual Meeting, Ohio, Nov 2012.
22. "Acoustic Emission Monitoring for Ultrasonic Cavitation Based Dispersion Process", INFORMS Annual Meeting, Phoenix, Arizona, October 14-17, 2012
23. "Atomic-scale Friction and the nanoHUB Stick-Slip Toolkit", Purdue University, 2011
24. "Atomic Stick-Slip toolkit", STLE Annual Meeting, Las Vegas, May 16-10, 2010

PROFESIONAL SERVICE AND AFFILIATIONS

- **Editorship and Journal Referee**
  - *Associate Editor*, Journal of Intelligent Manufacturing 2019-present
  - *Journal Referee*
    - IEEE Transactions on Automation Science and Engineering
    - IISE Transactions
    - International Journal of Production Research
    - Journal of Manufacturing Systems
    - Technometrics
    - ASME Journal of Manufacturing Science and Engineering
    - IET Control Theory & Applications
    - Transactions of the Institute of Measurement and Control
- **Conference Organization**
  - *Session Chair*, "Data Science and Analytics for Quality and Reliability Assurance", INFORMS Annual Meeting, Oct 20-23, 2019, Seattle, USA
  - *Special Session Organizer*, "Industrial Data Analytics for Smart Manufacturing", the 15th International Conference on Automation Science and Engineering (IEEE CASE 2019), August 22-26, Vancouver, BC, Canada
  - *Symposium Organizer*, the 9th International Symposium on Quality Science and Reliability Technology, July 5-6, Beijing, China
  - *Symposium Organizer*, "Symposium on Additive Manufacturing of Ceramics, Concretes, and Composites", Manufacturing Science and Engineering Conference (MSEC), June 10-14, Erie, Pennsylvania, USA (received the **Best Organizer of Symposium and Session Award**)
  - *Session Chair*, "Data Science and Analytics for Quality and Reliability Assurance", INFORMS Annual Meeting, Nov 4-7, 2018, Phoenix, Arizona, USA
  - *Organizer and Session Chair*, "Real-Time Modeling, Monitoring, and Control of Advanced Manufacturing Systems I and II", the 14th International Conference on

Automation Science and Engineering (CASE 2018), August 20-24, 2018, Munich, Germany

- *Session Chair*, "Analysis of Complex Manufacturing Data", 2017 INFORMS Annual Meeting, Houston, TX, Oct 22-25
- *Session Chair*, "Data Science and Analytics for Quality and Reliability Assurance", 2017 IISE Annual Conference, Pittsburgh, May 23, 2017
- *Session Chair*, "Energy and Sustainability", The Southwest Emerging Technology Symposium, April 2016.

- **Professional Membership and Office**
  - *Member*
    - Society of Manufacturing Engineers (SME)
      - **President**, SME Student Chapter at UW-Madison, 2014~2015
      - **Vice President**, SME Student Chapter at UW-Madison, 2013~2014
    - Institute of Industrial and Systems Engineers (IISE)
    - Institute for Operations Research and the Management Sciences (INFORMS)
    - Institute of Electrical and Electronics Engineers (IEEE)
  - *Council member*
    - System Reliability Section, Society of Systems Engineers of China
    - Quality and Reliability Section, Society of Management Science and Engineering of China

SELECTED SERVICE AT PEKING UNIVERSITY

- *Class administrator***,** class of MS graduate students enrolled in 2019, College of Engineering 2019~2021
- *Advisor* for undergraduate students, College of Engineering
- *Committee member* of student scholarship application, College of Engineering
- *Graduate student admission committee member,* Dept. of Industrial Eng. and Management