Haoshu Cai (Sherry)

Cellphone: (513) - 288 - 5808
Email: caihu@mail.uc.edu
Google Scholar: https://scholar.google.com/citations?user=ZZxphFAAAAAJ&hl=zh-CN

Research Keywords:

Prognostics and Health Management, Data Analytics, Statistics, Process Monitoring,

Bayesian, Deep Learning, Time Series, Active Learning

Manufacturing Engineering, Wind Energy, Semiconductors.

Education:

Ph.D	*Present*	Mechanical Engineering	University of Cincinnati, Cincinnati, US
M.S.	04/2017	Manufacturing Engineering of Aerospace	Nanjing University of Aeronautics & Astronautics, Nanjing, China
B.S.	07/2013	Mechanical Engineering	Nanjing Tech University, Nanjing, China

Experience:

09/2017 – *Present*	***Research Assistant*** at NSF/IUCR Center for Intelligent Maintenance System (IMS), University of Cincinnati, OH, US ***Advisor***: **Prof. Jay Lee** (Ohio Eminent Scholar, L.W. Scott Alter Chair Professor)
06/2018 – 08/2018	***Summer Intern, Foxconn***, Jincheng, China

Projects:

Project with *Applied Materials* on *Semiconductors*   **01/2019 – Present**
  - Help develop an automatic outlier detection for semiconductor fabrication process.

Project with *Foxconn* on *Smart Mfg. for Optical Lens*   **06/2018 – Present**
  - Develop virtual metrology model for the injection molding process in lens manufacturing;
  - Develop an AI based strategy for lens angle & cavity pairing;
  - Develop an automatic fault analysis system for lens production process;
  - Compare the Apple camera test data and Foxconn quality inspection data to optimize product specification.

Project with *AU Optronics Corporation* on *Robot Mechanical Arms*   **01/2018 – 06/2018**
  - Health assessment for robot mechanical arms
  - Fault diagnosis for robot mechanical arms

Project with *Shanghai Electric* on *Wind Turbine*   **10/2017 – 12/2017**
  - Intelligent vessel routing for off-shore wind farms

Journal Publications:

[1] *Cai, Haoshu*, Xiaoding Jia, Jianshe Feng, Yuan-Ming Hsu, Wenzhe Li, Jay Lee. 2018 "Gaussian Process Regression for Numerical Wind Speed Prediction Enhancement" *Renewable Energy*. (Under Review)

[2] *Cai, Haoshu*, Xiaodong Jia, Jianshe Feng, Qibo Yang, Yuan-Ming Hsu, Yudi Chen, Jay Lee. 2018. "A Combined Filtering Strategy for Short Term and Long Term Wind Speed Prediction with Improved

Accuracy" *Renewable Energy*.

[3] *Cai, Haoshu,* Yu Guo, Wen-an Yang & Kun Lu. 2017. "Mining Frequent Trajectory Patterns of WIP in Internet of Things based Spatial-temporal Database" *International Journal of Computer Integrated Manufacturing*, 30:12, 1253-1271.

[4] *Cai, Haoshu,* Yu Guo & Kun Lu. 2017. "A Location Prediction Method for Work-in-Process based on Frequent Trajectory Patterns". *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, 1-15.

[5] Jia, Xiaodong, Ming Zhao, *Haoshu Cai*, Jay Lee. 2018. "A Simplified Convolutional Sparse Filter for Impulsive Signature Enhancement and Its Application to the Prognostic of Rotating Machinery" *arXiv preprint* arXiv:1808.03587

Conference Papers and Presentations:

[1] Jia, Xiaodong, Bin Huang, Jianshe Feng, *Haoshu Cai*, Jay Lee. 2018. "A Review of PHM Data Competitions from 2008 to 2017." PHM Society Conference. Vol. 10. No. 1 (2018)

Professional Services (Review Experience):

- · International Journal of Computer Integrated Manufacturing