LI, Wenzhe

University of Cincinnati
560 Baldwin Hall PO Box 210072
Cincinnati, OH 45221-0072

Tel: 513-556-3412 (Office)
Email: li2w6@mail.uc.edu

Education

09.2018-present	**Ph.D.**	**Mechanical Eng. ,** University of Cincinnati, USA. NSF Industry/University Cooperative Research Center (I/UCRC) for Intelligent Maintenance Systems (IMS)
09.2015-03.2018	**M.E.**	**Control Sci. and Eng. ,** Beihang University, China.
02.2016-07.2016	**XCH.**	**Information Technology,** University of Wollongong, Australia.
09.2011-07.2015	**B.E.**	**Quality and Reliability Eng. ,** Beihang University, China
09.2013-07.2015	**B.A.**	**English Literature,** Beihang University, China.

Research Focus

Prognostics and Health Management, Deep Learning based Fault Detection and RUL Prediction, Digital Twin Technology for Manufacturing Process, Big Data Analysis in Semiconductor Manufacturing

Professional Skills

Matlab, Python, C, R, Keras, Pytorch, Solidworks, AutoCAD, Altium Designer

Research Experience

10.2018-present **Physics Informed Digital Twin for Optical Lens Module Virtual Assembling,** Collaborate project with Hon Hai/Foxconn Technology Group.

- Digital Twin assisted Smart Lens Manufacturing.
- Digital Twin assisted Optical Lens Injection Molding Optimization.

10.2019- present **Process Control (APC) Techniques and Machine Learning Algorithms in Semiconductor Manufacturing,** Collaborate project with Hitachi/ Hitachi High-Technologies Corporation.

- Semiconductor Etching Data Analysis.
- Developing etching machine chamber matching methodologies to optimize process recipes for correcting the mismatch of the individual chamber.

10.2018- present **Data Driven Prediction Methodologies for Machine Remaining Useful Life (RUL),**

- Aero-engine RUL/ Wind speed prediction based on deep learning method.
- Aero-engine RUL/ Wind speed prediction based on Bayesian method.

10.2018- present **Deep Learning for PHM, FDC and Reliability Analysis**

Work Experience

07.2019-11.2019 **Hon Hai/Foxconn Technology Group, L Group**

Internship *Industry Data Scientist*

- Developed Optical Lens Injection Molding Digital Twin Model
- Developed Mold Alignment Failure Analysis and RUL Prediction Methodology & GUI
- Developed Optical Lens Module Virtual Assembling Optimization Methodology

06.2020-08.2020 **Hitachi/ Hitachi High-Technologies Corporation**

Internship *Data Scientist*

- Conduct Semiconductor Etching Process Data Analysis
- Developed Chamber Matching Methodology based on Process Measurement and Wafer Map
- Developed Etching Recipe Optimization Methodology

Publications

- W. Li, X. Jia, X. Li, Y. Wang, J. Lee. A Markov model for short term wind speed prediction by integrating the wind acceleration information. Renewable Energy (2020).
- H. Cai, J. Feng, Q. Yang, W. Li, J. Lee. A virtual metrology method with prediction uncertainty based on Gaussian process for chemical mechanical planarization. Computers in Industry 119 (2020).
- H. Cai, J. Feng, W. Li, Y. Hsu, J. Lee. Similarity-based Particle Filter for Remaining Useful Life prediction with enhanced performance. Applied Soft Computing, 106474 (2020).
- H. Cai, X. Jia, J. Feng, W. Li, Y. Hsu, J. Lee, Gaussian Process Regression for numerical wind speed prediction enhancement, Renewable Energy, (2019)
- X. Jia, H. Cai, Y. Hsu, W. Li, J. Feng, J. Lee, A Novel Similarity-based Method for Remaining Useful Life Prediction, (2019)
- Y. Xu, W. Hou, W. Li, N. Zheng, Aero-engine Gas-path Fault Diagnosis based on Spatial Structural Characteristics of QAR Data. Proceedings of Annual Reliability and Maintainability Symposium, (2018)
- J. Shi, W. Li, X. Guo, Y. Yang, General models for system reliability and testability optimization considering multi mission profiles, PHM-Harbin 2017 – Proceedings, (2017)
- J. Shi, X. Guo, W. Li, A Method of Testability Optimization Based on BIT Working Mode Considering the Basic Reliability, PHM-Harbin 2017 - Proceedings, (2017)
- J. Shi, W. Li, X. Guo,A demonstration of build-in test design verification for a typical avionic power circuit using Matlab Stateflow, Proceedings of 2nd International Conference on Reliability Systems Engineering, (2017)
- J. Shi, X. Guo, W. Li, An Embedded Diagnosis Semi-physical System of Typical Avionics Based on LabVIEW and MATLAB, Proceedings of 2nd International Conference on Reliability Systems Engineering, (2017)
- W. Li, J. Shi, X. Duan, X. Guo, A test point selection method based on recognition of typical topology structure of complex networks, Proceedings of the 27th European Safety and Reliability Conference, (2017)
- Y, Zhao, J. Shi, W. Li, W. Cui, Research on false alarm identification method considering BIT test threshold, Proceedings of the 27th European Safety and Reliability Conference,(2017)