

YU ZHANG

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SUMMARY

- Research interests lie in autonomous driving and fault diagnostics and prognostics, like the perception for autonomous driving, data-driven approaches for fault diagnostics, etc.
- Learned some fundamentals of the neural network and apply to the fault diagnostics
- Master research mainly focuses on gas turbine fault diagnostics, developed both physics-based thermodynamics model and neural network data-driven approaches
- Have strong learning capacity, begin to self-learning reinforcement learning and python
- CATIA/ENOVIA, 7 years | Matlab, 2 years | Python 0.5 years
- Permanent Residence status

EDUCATION

Ph.D. of **Mechanical Engineering** Jan. 2022-Present

McMaster University, Hamilton, Canada

- Focus on fault detection and diagnosis

Master of Applied Science in **Aerospace Engineering** Sept. 2016-Feb. 2019

Carleton University, Ottawa, Canada

- Focus on failure diagnostics for the gas turbine
- GPA: average A+, 11.8/12

Master of Engineering in **Fluid Machine and Engineering** 2006-2008

Northeastern University, Shenyang, China

Bachelor of Engineering in **Mechanical Design, Manufacturing and Automation** 2002-2006

Sichuan University, Chengdu, China

PUBLICATIONS

- **Y. Zhang**, H. Hanachi, J. Liu, and C. Yang, "Model-based degradation inference for Auxiliary Power Unit start system," *Engineering Failure Analysis*, Sept 2020.
- **Y. Zhang**, J. Liu, and H. Hanachi, "Physics-based Model and Neural Network Model for Monitoring Starter Degradation of APU," in *2018 IEEE International Conference on Prognostics and Health Management*, 2018.

HONORS / AWARDS

- 2017 Graduate Scholarship, Carleton University 2017
- 2018 Graduate Scholarship, Carleton University 2018
- 2022 Graduate Scholarship, McMaster University 2022

PROFESSIONAL EXPERIENCE

Product Engineer Oct. 2020-April. 2021
Shenyang Amphenol Sunpool Automotive Electronics Co., Ltd, Shenyang, China

- Responsible for the automotive antenna structure design and development, sample trial production and compose APQP documents, like special characteristic list, sub-supplier material list, DFMEA etc.
- Get familiar with the vehicle development milestones, like ET, PT, SOP, DVP etc.

Industrial Designer May. 2019-Dec. 2019
Joyolight Group Inc., Mississauga, Ontario, Canada

- Provide technical support for other departments, including shop drawing for sales, manufacturing drawing for manufactures, installation drawing for customers, etc.
- Develop production specifications and installation guides

Design leader of System Installation Sept. 2008-Jul. 2016
Shenyang Aircraft Commercial Company, Aviation Industry Corporation of China (AVIC)

Project with MA700, Shenyang, China Mar. 2014-Jun. 2016

- Conducted the system installation design of the Hydraulic system

Project with Bombardier Inc., Shenyang, China Apr. 2010-Jun. 2013

- Led a group of 12 engineers to work on the system installation of C-Series, and released all data on time and to specifications,
- Designed and optimized support structures for system components and tubes while adhering to engineering principles and techniques, like interface, manufacture, tolerance, electrical bonding, etc.
- Conducted the system installation design of the Fuel system

Project with Bombardier Inc., Montreal, Canada Jun. 2009-Apr. 2010

- Undertook professional training to gain essential abilities, such as CATIA, culture differences, etc.
- Designed APU feed fuel double-wall tubes from Center Wing Box to the Rear Barrel to lay out the concept of the fuel tubing system

THESIS

Performance Estimation and Fault Diagnostics for the Starter of Auxiliary Power Unit
Mechanical and Aerospace Department, Carleton University Sept. 2016-Jan. 2019

- Developed a physics-based thermodynamics model associated with APU starting process
- Designed a feedforward, backpropagation neural network for comparison
- Simulated with Matlab to visualize the data comparison and predict the life trending

VOLUNTEERS

- Transportation Specialist, Ottawa Dragonboat Festival, Ottawa, ON Jun. 2017
- Costumer Service Specialist, RBC Bluesfest, Ottawa, ON Jul. 2017