

Ruiyi Fang

🏠 Homepage: <https://raelynfang.github.io/>

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🐙 GitHub  LinkedIn

👤 Google Scholar

EDUCATION

- **Central South University** Changsha, China
Master of Engineering in Electronic Information Sep.2022 - Jun.2025
Master's thesis: Domain Adversarial Based Network for Industrial Few-sample Fault Detection
GPA: **3.82/4.0** **Advisor:** Kai Wang
- **Chang'an University** Xi'an, China
Bachelor of Engineering in Automation Sep.2018 - Jun.2022
Bachelor's thesis: Domain Adversarial Neural Network for Industrial Fault Detection
GPA: **3.61/5.0** Rank: 10%

PUBLICATIONS

- **Unsupervised Domain Adversarial Network for Few-sample Fault Detection in Industrial Processes**
Ruiyi Fang, Kai Wang*, Jing Li, Xiaofeng Yuan and Yalin Wang
Advanced Engineering Informatics (AEI), 2024
- **Multi-step Difference-driven Domain Adversarial Network for Few-sample Fault Detection in Dynamic Industrial Systems**
Ruiyi Fang, Kai Wang*, Xiaofeng Yuan, Zeyu Yang, Yalin Wang and Chunhua Yang
Engineering Applications of Artificial Intelligence (EAAI), 2025
- **Multi-source Domain Adversarial Network for Industrial Few-sample Fault Detection Under Variable Inconsistency**
Ruiyi Fang, Kai Wang*, Xiaofeng Yuan, Yalin Wang and Chunhua Yang
Transactions on Industrial Informatics (TII), In process, 2025
- **Wasserstein Distance Based Domain Adversarial Autoencoder for Industrial Few-sample Fault Detection**
Ruiyi Fang, Kai Wang*, Xiaofeng Yuan, Yalin Wang, and Chunhua Yang
Asian Control Conference (ASCC), Jul. 2024 (Oral)

RESEARCH EXPERIENCE

- **Deep learning fault detection method based on spatio-temporally industrial data** Jan.2024 - Present
– Research in the applications of transfer learning, particularly adversarial-based neural network, and self-attention mechanism, for fault detection in industrial dynamic process with few data samples.
- **Data-driven process monitoring for the process industries** Jan.2022 - Dec.2023
– Research in the theory of unsupervised data-driven methods, transfer learning, few sample, and imbalanced training problem.

AWARDS & HONORS

- **National Scholarship** 2024
- **Post-graduate First-Class Scholarship** 2022,2023,2024
- **Academic Excellence Scholarship** 2018,2021
- **Summer Exchange at Kyoto University, Japan.** 2023
- **Summer Exchange at Universiti Teknologi MARA (UiTM), Malaysia.** 2020
- **“HUAWEI CUP” China Post-graduate Mathematical Contest In Modeling** Second Prize(Leader) 2023
- **“HUAWEI CUP” China Post-graduate Mathematical Contest In Modeling** Third Prize 2022
- **Interdisciplinary Contest in Modeling (ICM)** Honorable Mention(Leader) 2021
- **National Mathematics Competition for College Students** Third Price 2021
- **National English Competition for College Students** Third Prize 2021
- **National English Translation Competition for College Students** First Prize(1%) 2020
- **Contemporary Undergraduate Mathematical Contest in Modeling** Second Prize(Leader) 2020

SKILLS

Programming Skills:

Advanced: Python, PyTorch

Intermediate: Matlab, C, CAD, L^AT_EX

Basic: HTML/CSS, Git

Robotic Simulation & Control Platforms: ROS, Coppeliassim

LANGUAGE

Mandarin (Native), **English** (TOEFL 99/120), **Japanese** (JLPT N1)

ACADEMIC SERVICES

- **Reviewer for Conferences**
– Asian Control Conference (ASCC), 2024