

# Ruiyi Fang

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## 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: **3.57/5.0**    Rank: 10%

## PUBLICATIONS

- **Multi-step Difference-driven Domain Adversarial Network for Few-sample Fault Detection in Dynamic Industrial Systems**  
Ruiyi Fang, Kai Wang\*, Xiaofeng Yuan, Yalin Wang and Chunhua Yang  
*Knowledge-Based Systems (KBS)*, Under review
- **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)*
- **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

- **Post-graduate First-Class Scholarship** 2022,2023
- **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 Prize 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, L<sup>A</sup>T<sub>E</sub>X

Basic: HTML/CSS, Git

**Robotic Simulation & Control Platforms:** ROS, CoppeliaSim

## LANGUAGE

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

## ACADEMIC SERVICES

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