

Ruiyi Fang

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🐙 GitHub  LinkedIn
👤 Google Scholar

EDUCATION

- **The University of Tokyo** Tokyo, Japan
Doctor of Engineering in Mechanical Engineering Oct.2025 - Present
Advisor: Yuji Yamakawa
- **Central South University** Changsha, China
Master of Engineering in Artificial Intelligence Sep.2022 - Jun.2025
Advisor: Kai Wang
- **Chang'an University** Xi'an, China
Bachelor of Engineering in Automation Sep.2018 - Jun.2022

PUBLICATIONS

- **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
- **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
- **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 - Jun.2025
– Research on the applications of transfer learning and deep learning, particularly adversarial-based neural network, encoder-decoder models and self-attention mechanism for fault detection in industrial dynamic process with few samples, as well as data analysis and processing methods for raw industrial data.
- **Data-driven process monitoring for process industries** Jan.2022 - Dec.2024
– Research on the theory of data-driven methods, including Transfer Learning, Transformer, Generative model, Imitation Learning, Reinforcement Learning, Contrastive Learning, Meta Learning, and problems of few-sample, dynamic and imbalanced training.

AWARDS & HONORS

- **Outstanding Graduate** 2025
- **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 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:

Python, PyTorch, Matlab, C, CAD, Java, L^AT_EX, HTML/CSS, Git

Robotic Simulation & Control Platforms: ROS, Coppeliasim

LANGUAGE

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

ACADEMIC SERVICES

Reviewer:

Knowledge-Based Systems (KBS), Asian Control Conference (ASCC)