Ruiyi Fang

⌂ Homepage: https://raelynfang.github.io/   ⓖ GitHub ▸ LinkedIn
✉ fangry@csu.edu.cn   🎓 Google Scholar

EDUCATION

- **Central South University**   Changsha, China
  Master of Engineering in Artificial Intelligence (Recommended for admission)   *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

- **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

- **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), Under review, 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 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 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, Java, LaTeX
  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