Wang, Ruijun

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Education and Work Experience

Inner Mongolia Yuhong Construction Engineering Co., Ltd., Employee — China, 2023 - Present

- Data Analyst

MEng **North China Electric Power University**, Energy and Power — China, 2020 – 2023

- **Dissertation:** Research on Fault Diagnosis of Wind Turbine Gearbox Based on Deep Learning
- **GPA:** 3.50/4.0
- **Ranking:** Department ranking: 11/180; Professional ranking: 7/106 (2022)
- **Honor and Award:** Outstanding graduate student (2022)
- **Coursework:** Equipment Status Detection and Fault Diagnosis Technology; Big data and Artificial Intelligence; Detection Technology; Matrix Theory; Numerical Analysis; Mathematical Programming etc.

Beijing Huazhidian Technology Co., Ltd. — China, 2021 – 2022

- Student Assistant

Inner Mongolia Taili Engineering Construction Co., Ltd., Practice — China, 2019 – 2020

- Engineer

BEng **Inner Mongolia University of Technology**, Building Environment and Energy Application Engineering — China, 2015 – 2019

- **Coursework:** Advanced mathematics; Linear Algebra; Probability theory; Automatic control principle; Advanced Computer Programming; Mechanical Design; Building environment and equipment engineering CAD etc.

Academic Paper

Published

- **R. Wang**, Y. Liu, Z. Fan*, " Application of a Dense Fusion Attention Network in Fault Diagnosis of Centrifugal Fan. " *arXiv preprint* arXiv:2311.07614. (*Applied Intelligence*, IF=5.3, Q2. (Accepted))
- X. Xu(supervisor), **R. Wang(co-first author)**, Z. Fan*, X. Ma, Z. Zhao and H. Wang, " MS-DRT: A Multi-level and Multi-scale Branch Learning Scheme for Fault Diagnosis of Rotating Machinery. " *IEEE Transactions on Industrial Informatics*, vol. 20, no. 2, pp. 2799-2811, 2024. (Journal Articles, IF=12.3, Q1)
- X. Zhu*(supervisor), **R. Wang(co-first author)**, Z. Fan, D. Xia, Z. Liu and Z. Li, " Gearbox Fault Identification Based on Lightweight Multivariate Multidirectional Induction Network. " *Measurement*, vol. 193, Art.no.110977. (Journal Articles, IF=5.6, Q1)
- Z. Fan*, X. Xu(supervisor), **R. Wang** and H. Wang, " Fan Fault Diagnosis Based on Lightweight Multiscale Multiattention Feature Fusion Network. " *IEEE Transactions on Industrial Informatics*, vol. 18, no. 7, pp. 4542-4554, 2022. (Journal Articles, IF=12.3, Q1)
- Z. Fan*, X. Xu(supervisor), **R. Wang** and H. Wang, " CF-HSACNN: A Joint Anti-noise Learning Framework for Centrifugal Fan State Recognition. " *Measurement*, vol. 202, Art.no.111902. (Journal Articles, IF=5.6, Q1)
- X. Zhu*(supervisor), X. Ye, **R. Wang**, W. Zhao, X. Luo, J. Zhao, Z. Han, X. Gao, " Investigation and Experimental Study on Gearbox Vibration Fault Diagnosis Method Based on Fusion Feature Convolutional Learning Network. " *Experimental Techniques*, pp. 1-12, 2022. (Journal Articles, IF=1.6, Q3)
- B. Qian, J. Huang, X. Zhu*(supervisor), **R. Wang**, X. Lin, N. Gao, W. li, L. Dong, W. Liu, " Research on the Fault Diagnosis Method of a Synchronous Condenser Based on the Multi-scale Zooming Learning Framework. " *Sustainability*, 14(22), 14677, 2022. (Journal Articles, IF=3.9, Q2)

Under review

- **R. Wang**, Z. Fan*, Y. Liu, X. Xu, H. Wang, " A Time-Frequency Dynamic Threshold Self-Attention and Energy Self-Learning Strategy Applied to Gearbox Fault Diagnosis in Noisy Environments. " *IEEE Transactions on Instrumentation and Measurement*
- **R. Wang**, Z. Fan*, Y. Liu, X. Xu, H. Wang, " From Frequency Domain to Time Domain: A joint refinement threshold interactive fusion method applied to gearbox fault diagnosis. " *IEEE Internet of Things Journal*
- **R. Wang**, Z. Fan*, Y. Liu, X. Xu, H. Wang, " Application of Multi Operation Joint Measurement Method Based on Pyramid Structure in Gearbox Fault Diagnosis. " *IEEE Sensors Journal*
- **R. Wang**, Z. Fan*, Y. Liu, X. Xu, " MDFLF: A Multi-Distributed Feature Learning Framework for Gearbox Fault Diagnosis. " *IEEE Transactions on Industrial Cyber-Physical Systems*

Academic and Research Experience

Peer review (*As reviewer of conference*)

- 7th International Conference on Computer Science and Application Engineering

Participated in book writing (*Participate in revision work for text, formula, chart and model.*)

- **Book title:** Intelligent Monitoring Method and Application of Vibration Status of Electric Power Equipment

Participated in research projects (*Writing project application and project paper; Providing project algorithm program.*)

- State Grid Xinjiang Electric Power Research Institute 2022 300MVar Synchronous Condenser Fault Diagnosis Technical Service
- Development of Energy Management Platform for Carbon Neutrality Smart Park of State Power Investment Corporation (SPIC)
- Research on Vibration Feature Representation and State Identification Method of Wind Turbine Transmission System under the Framework of Deep Learning
- Development of Intelligent Detection and Management System for Wind Turbine

Participated academic conferences

- 2022 Hebei Vibration Engineering Society Conference
- 2021 Academic Annual Conference of Dynamic Testing Professional Committee of Chinese Society of Vibration Engineering
- 2020 Chongqing Wind Energy Annual Conference

Software copyrights

- Software for wind turbine gearbox status monitoring system

Guidance experience

- Supervised a total of 6 undergraduate design students

Skill and Language

Skills: Able to use software such as Python, Matlab, Origin, AI and Visio; **Languages:** English - Fluent (TOEFL: 100), Mandarin - Native speaker

Algorithm Training on AI

Hunan Gupao Network Technology Co., Ltd., Trainee — China, 2022 – 2023

- **Machine Learning:** Linear Regression; Logistic Regression; Clustering Algorithm; Decision Tree; Ensemble learning; Support Vector Machine; Bayesian Algorithm; Association Rule Algorithm - Apripri; Word Vector Model - Word2Vec etc.
- **Deep Learning:** Core Algorithms - Neural Network, CNN, RNN, Transformer, VIT etc.; Object Detection - MaskRCNN, YOLO series, Detr, Semi Supervised Learning, EfficientNet etc.; Image Segmentation - Unet, U2Net, DeepLab etc.; Behavior Recognition - SlowFast; GNN; PointNet; GAN; RL etc.