

# Zhixia Fan

[Homepage](#) | [+86 15374721626](#)

## EDUCATION

- North China Electric Power University** | *MEng* 2019 – 2022  
Major: Power Engineering China  
• Dissertation: Research on State Recognition Method of Centrifugal Fan Based on Deep Learning
- Inner Mongolia University of Technology** | *BEng* 2013 – 2017  
Major: Traffic and Transportation China  
• Dissertation: A Study of Intelligent Parking Solutions Based on Business Cluster

## WORK EXPERIENCE

- Inner Mongolia Zhongkai Construction Engineering Co., Ltd.** 2022 – Present  
**Employee** Engineer
- Jiangsu Fangtian Power Technology Co., Ltd.** 2020-2021  
**Practice** Student Assistant
- Dazhongdianping, Micro Life Co., Ltd.** 2017-2019  
**Employee** Data Analyst

## ACADEMIC PAPER

Published (" \* " is the corresponding author)

- **Z. Fan(corresponding author)**, 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 Article, IF=11.7, Q1)
- **Z. Fan(corresponding author)**, X. Xu(supervisor), R. Wang and H. Wang, " CF-HSACNN: A Joint Anti-noise Learning Framework for Centrifugal Fan State Recognition. " *Measurement*, vol. 202, 111902, 2022. (Journal Article, IF=5.2, Q1)
- **Z. Fan**, R. Wang\*, Y. Liu, X. Xu, H. Wang, " A decoupled learning with reduced convergence domain applied to fault diagnosis of rotating machinery. " *Structural Health Monitoring*, Accepted. (Journal Article, IF=5.7, Q1)
- R. Wang, **Z. Fan(corresponding author, co-first author)**, Y. Liu, X. Xu, H. Wang, " A dynamically balanced wavelet coefficient matching transient energy operator for state identification of rotating machinery. " *Advanced Engineering Informatics*, Accepted. (Journal Article, IF=8.0, Q1)
- R. Wang, **Z. Fan(corresponding author, co-first author)**, Y. Liu, " MLDM: A Multi Learning Domain Model for Fault Identification of Centrifugal Fan. " *Measurement Science and Technology*, vol. 36, no. 2, 026109, 2025. (Journal Article, IF=2.7, Q1)
- X. Xu(supervisor), R. Wang, **Z. Fan(corresponding author)**, 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 Article, IF=11.7, Q1)
- R. Wang, Y. Liu, **Z. Fan(corresponding author)**, " Application of a Dense Fusion Attention Network in Fault Diagnosis of Centrifugal Fan. " *Applied Intelligence*, vol. 54, no. 21, pp. 10300-10319, 2024. (Journal Article, IF=3.4, Q2)
- X. Zhu\*(supervisor), R. Wang, **Z. Fan**, D. Xia, Z. Liu and Z. Li, " Gearbox Fault Identification Based on Lightweight Multivariate Multidirectional Induction Network. " *Measurement*, vol. 193, 110977, 2022. (Journal Article, IF=5.2, Q1)

## Under review

- **Z. Fan\***, R. Wang, Y. Liu, X. Xu, H. Wang, "A Method of Joint Time-Frequency Threshold Refinement Applied in Fault Diagnosis of Power Equipment in Thermal Power Plants." *IEEE Transactions on Reliability*

## ACADEMIC AND RESEARCH EXPERIENCE

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### Peer reviews | *As reviewer of journals*

- Information Fusion, IF = 14.7
- IEEE Internet of Things Journal, IF = 8.2
- Knowledge-Based Systems, IF = 7.2
- Measurement Science and Technology, IF = 2.7
- Nonlinear Dynamics, IF = 5.2
- Scientific Reports, IF = 3.8

### Participated in research projects | *Writing project application and project paper; Providing project algorithm program*

- Development of thermal system performance evaluation system based on big data and artificial intelligence algorithm
- Module development of intelligent analysis of energy consumption characteristics of steam turbine units and intelligent early warning of key equipment based on big data analysis
- Development of intelligent detection and management system for wind turbine

### Participated academic conferences

- 2022 IEEE Authorship and Open Access Symposium
- 2022 Hebei Vibration Engineering Society Conference
- 2021 Academic Annual Meeting of Dynamic Testing Professional Committee of Chinese Society of Vibration Engineering
- 2020 Chongqing Wind Energy Annual Conference

### Software copyrights

- Software for wind turbine blade defect detection system

### Guidance experience

- Supervised a total of 5 undergraduate design students

### Skill and Language

- Able to use software such as Python, Matlab, Photoshop and Visio; English - Fluent (TOEFL: 95, GRE: 334), Mandarin - Native speaker

## ALGORITHM TRAINING ON AI

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### Hunan Gupao Network Technology Co., Ltd. | *Trainee*

2022 – 2023

- **Machine Learning:** Linear Regression; Logistic Regression; Clustering Algorithm; Decision Tree; Ensemble learning; Support Vector Machine; Bayesian Algorithm; Association Rule - Apriori; Word Vector Model - Word2Vec; Hidden Markov Model 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.