Junhao Lu

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EDUCATION

Guangzhou University
Bachelor of Statistics — GPA: 3.67/4.00, Average Score: 90.38/100, Rank: 5/76 Sep. 2022 – Present
Relevant Coursework: Data Mining, Finance, Stochastic Processes, Multivariate Statistical Analysis

PUBLICATIONS

Lu, J., Xu, Q., Hu, J.. "A novel graph learning framework for interpretable and imbalance financial fraud detection". Engineering Applications of Artificial Intelligence, 2026.

RESEARCH MANUSCRIPTS

Hu, J.[1], **Lu, J.**[1,*], Tang, J., "Mixed time series pattern learning for multi-task wind power and ramp event forecasting", Pattern Recognition, (under review).

Hu, J., **Lu, J.**, Zhang, C., Wang, Y., "Spatio-temporal hierarchical forecasting using group-feature graph convolutional network for probabilistic wind power prediction", Applied Energy (under review).

RESEARCH EXPERIENCE

Spatio-temporal Hierarchical Wind Power Probabilistic Prediction Oct. 2023 - Jan. 2025
Hainan Unversity *Supervisor: Prof. Ying Wang & Prof. Jianming Hu*

- Proposed a graph learning framework with group-feature convolution, frequency debiasing, and hierarchical optimization.
- Built a multi-level forecasting system for turbines, farms, and clusters, ensuring spatial and temporal consistency.
- Achieved strong predictive performance on real-world wind datasets.
- Code available: https://github.com/lujunhao123/Hierformer.

Graph Learning for Financial Fraud Detection Oct. 2024 - Jun. 2025
Intelligent Statistics & Decision-Making Lab *Supervisor: Prof. Jianming Hu*

- Developed a spectral graph learning framework to address sparse fraud labels and deceptive behaviors.
- Enhanced detection accuracy by integrating spectral response analysis and frequency filtering.
- Improved interpretability through node importance scoring and structural attribution.
- Code available: https://github.com/lujunhao123/IFDetector.

Multi-task Modeling for Mixed Time Series Jan. 2025 – Aug. 2025
Intelligent Statistics & Decision-Making Lab *Supervisor: Prof. Jianming Hu*

- Proposed MixForecastor, a framework that jointly forecasts wind power and ramp event risks from mixed continuous–discrete time series.
- Designed a fusion and auxiliary module to couple continuous variations with ramp dynamics, boosting rare event prediction.
- Developed a bi-level optimization strategy to handle distributional heterogeneity and severe class imbalance across wind farms.
- Code available: https://github.com/lujunhao123/MixForecastor.

WORK EXPERIENCE

[1]These authors contributed equally (co-first authors).
[2]Corresponding author.

Industrial Statistical Learning in Computer-Aided Engineering Mar. 2025 – Jun. 2025
Data Science Intern *ZWSOFT, Guangzhou*

- Applied statistical learning methods to optimize computer-aided engineering mesh pipelines, enhancing mesh quality, computational efficiency, and numerical stability for complex geometries.
- Developed point cloud–driven B-rep reconstruction and deformation models based on convolutional operators for adaptive mesh fitting in simulations.
- Advanced self-supervised computer-aided design modeling by integrating Transformer-encoded point clouds and diffusion-based approaches for segmentation and mesh generation.

EXTRA-CURRICULAR ACTIVITIES

National Market Research and Analysis Competition Dec. 2023 – Apr. 2024
Project Topic: Satisfaction Survey on Local Health Service Centers

- Conducted field visits and interviews at grassroots healthcare centers in Dongguan.
- Identified key issues including long patient wait times and insufficient follow-up care.

National Statistical Modeling Competition Mar. 2025 – May. 2025
Project Topic: Detecting Fraud in Transaction Graphs

- Designed a financial fraud detection system based on subgraph sampling to mitigate class imbalance.
- Outperformed other statistical methods on three real-world transaction datasets.

Youth Volunteer Association Committee Member Dec. 2022 – Sep. 2023

- Completed over 240 hours of volunteer service, organizing community activities and outreach.
- Recognized as Outstanding Volunteer at Guangzhou South Railway Station for exemplary dedication.

AWARDS AND HONORS

- Provincial First Prize in National Market Research and Analysis Competition (2024)
- Provincial First Prize in National Statistical Modeling Competition (2025)
- First-Class Scholarship at Guangzhou University (Top 5%) (2024)
- Outstanding student of Guangzhou University (Top 5%) (2024)
- Provincial Third Prize in National Statistical Modeling Competition (2024)
- School-level Bronze Prize in China Interational Collere Suudents'Innovation Competition (2024)