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

RESEARCH MANUSCRIPTS

Hu, J.[1], **Lu, J.[1,2]**, Tang, J. *Mixed time series pattern learning for multi-task wind power and ramp event forecasting. Pattern Recognition*, 2025 (under review).

Lu, J., Xu, Q., Hu, J. *A novel graph learning framework for interpretable and imbalanced financial fraud detection. Engineering Applications of Artificial Intelligence*, 2025 (under second-round 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 Soft Computing*, 2025 (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 Neural Network Transformer 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 Neural Networks 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

Industrial Machine Learning in Computer-Aided Engineering Mar. 2025 – Jun. 2025
Machine Learning Intern *ZOSFT, Guangzhou*

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

- Applied ML methods to optimize CAE mesh pipelines, improving quality, efficiency, and numerical accuracy for complex geometries.
- Developed point cloud–driven B-rep reconstruction and CNN-based deformation models for adaptive mesh fitting in simulations.
- Advanced self-supervised CAD modeling by integrating Transformer-encoded point clouds and diffusion models 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)