

Haoyu Zhang

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EDUCATION BACKGROUND

09/2021-06/2025

Zhongnan University of Economics and Law

China

- **Degree:** Bachelor of Economics
- **Major:** Financial Mathematics

RESEARCH EXPERIENCE

2023.11-2024-3 Continuous-Time Dynamic Graph Learning via Uncertainty Masked Mix-Up on Representation Space

- **Problem Identification:** The study centers on the utilization of continuous dynamic time graphs (CDTGs) for representing learning directions. It confronts the issue of limited generalization in cold-start scenarios due to the model's dependence on copious historical data and proneness to overfitting.
- **Experimental Evaluation & Results:** The experimental results were resoundingly positive. The application of the proposed strategy consistently led to marked improvements in accuracy across the tested models, decisively substantiating its effectiveness in bolstering the predictive prowess of CDTGs under cold-start conditions.

2024.02-2024-04

Wind Power Prediction with Multi-scale Cross Graph Network

- **Problem Identification:** Wind power generation is inherently stochastic due to the intermittent and fluctuating nature of wind. Conventional forecasting models often fail to capture the complex nonlinear and nonstationary patterns in wind power data, struggling with unexpected noise in the time dimension, frequency domain, and variable heterogeneity across variables.
- **Experimental Evaluation & Results:** Extensive experiments across four wind power datasets with varying trends validated the effectiveness of CrossGFA. Compared to a baseline CrossGNN without frequency enhancements, the proposed model achieved remarkable reductions in mean absolute error (up to 1.6%) and root mean square error (up to 2.4%).

PUBLICATIONS

- Haoyu Zhang, Daoli Wang, Xuchu Jiang. *IMCSN: An Improved Neighborhood Aggregation Interaction Strategy for Multi-scale Contrastive Siamese Networks*. *Pattern Recognition*; (Online; JCR Q1, CCF-B)
- Haoyu Zhang, Xuchu Jiang. *ConUMIP: Continuous-Time Dynamic Graph Learning via Uncertainty Masked Mix-Up on Representation Space*. *Knowledge-based Systems*; (Accepted; JCR Q1, CCF-C)
- Haoyu Zhang, Daoli Wang, Xuchu Jiang. *CrossGFA: Wind Power Prediction with a Multi-scale Cross-Graph Network via a Frequency-enhanced Channel Attention Mechanism*. *Applied Intelligence*; (Accepted; JCR Q2, CCF-C)
- Haoyu Zhang. *LSMRec: Leveraging Hash-Enhanced Semantic Mapping for Superior Sequential Recommendations*. *ICTAI 2024*; (oral; CCF-C)
- Haoyu Zhang, Xiaowen Zhang, Chao Song, Xuchu Jiang. *DaRF: Self-Paced Graph Contrastive Learning via Power Series Graph Filtering*. *Pattern Recognition*; (Under Review; JCR Q1, CCF-B)
- Biao Zhang, Haoyu Zhang, Wenlin Li, Nisang Chen, Xuchu Jiang. *Contrastive learning-based deep embedded clustering and the TCN-DMAAttention model for traffic congestion prediction*. *IEEE Transactions on Intelligent Transportation Systems*; (R2; JCR Q1, CCF-B)
- Xinke Jiang, Yue Fang, Rihong Qiu, Haoyu Zhang, Yongxin Xu, Hao Chen, Wentao Zhang, Ruizhe Zhang, Yuchen Fang, Xu Chu, Junfeng Zhao, Yasha Wang. *TC-RAG: Turing-Complete RAG's Case study on Medical LLM Systems*. *AAAI 2025*; (Under Review; CCF-A)

WORK EXPERIENCE

12/2023-02/2024	China Shipbuilding Industry Corporation (CSIC) 461 Research Institute	data mining
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By meticulously scrutinizing this wealth of data, I extract meaningful insights that not only provide an accurate snapshot of the current state of the vessel but also reveal trends, patterns, and correlations that can inform long-term strategic planning and asset management decisions. This involves utilizing advanced statistical techniques, predictive modeling, and data visualization tools to distill complex datasets into actionable intelligence.

HONORS

2023.9 - 2023.11	Kaggle (Google: Predict AI Model Runtime)	top5%
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Race direction: data mining, graph neural networks.

Race task: train the machine learning model based on the runtime data provided in the training dataset, and predict the runtime of graphs and configurations in the test set.

Model construction: In terms of model selection, we designed a model framework integrating GraphSAGE and ResGCN, and inserted MLP for nonlinear fitting, and finally predicted the correct order of the runtime speeds of different configurations of AI models.

RESULTS: Ranked 60+ out of more than 700 participating teams and achieved the bronze medal with top5% position.

SKILLS

- Proficient in Python and Matlab applications, specializing in machine learning and deep learning models, such as XGBoost, SVM, LSTM, GCN, etc.; relevant models have corresponding scientific research related outputs.
- Github homepage: <https://github.com/ZUEL-hyzzhang>.
- English: CET4;