Yin Huang

Master @ Southwest Jiaotong University | **Email:** hyin3364@gmail.com

EDUCATIONAL BACKGROUND

Master of Science in Safety Science and Engineering Sep. 2022 - Jun. 2025

School of Transportation and Logistics, Southwest Jiaotong University, Chengdu, China

- **GPA:** 89.37/100 **Advisors:** Youhua Tang
- **Thesis:** *Fault Warning of Hydraulic System of Railway Tamping Vehicle Based on Deep Learning*
- **Research Interests:** Deep learning-based anomaly detection in transportation infrastructure

Bachelor of Transportation Sep. 2018 - Jun. 2022

School of Transportation and Logistics, Southwest Jiaotong University, Chengdu, China

- **GPA:** 86.23/100 **Rank:** 9/118
- Postgraduate Recommendation to Southwest Jiaotong University without Examination
- **Thesis:** *Multi-Source Data-Based Study on the Catchment Area of Various Subway Stations*

PUBLICATIONS

1. Huang, Yin., Dong, Yongqi., Tang, Youhua., Li, Li. (2024). "*Leverage Multisource Traffic Demand Data Fusion with Transformer Model for Urban Parking Prediction*", accepted by the 28th International Conference of Hong Kong Society of Transportation Studies (HKSTS 2024) for presentation and publication, accepted by the Conference in Emerging Technologies in Transportation Systems (TRC-30) for presentation, Preprint.

PROJECT EXPERIENCE

Lifecycle Health Management for Hydraulic Systems in Railway Maintenance Machinery Mar. 2022 - Dec. 2024

- Developed a multi-sensor data fusion framework for hydraulic systems, integrating time-series, frequency-domain, and statistical feature extraction to quantify operational health indicators.
- Conducted cross-feature correlation analysis and visualized normal/abnormal patterns via t-SNE technology, revealing latent degradation mechanisms in maintenance scenarios.
- Designed and filed a patent for a hybrid deep learning model-based anomaly detection framework for hydraulic systems in railway maintenance.

Construction of Chengdu's Comprehensive Transportation Data Governance System Nov. 2020 - Dec. 2021

- Standardized multimodal transportation datasets (metro, bus, bike-sharing, ride-hailing) by implementing automated cleansing pipelines and OD trip identification algorithms.
- Benchmarked diverse clustering algorithms on real-world metro operational datasets, ultimately implementing hierarchical clustering to categorize 32 stations along Chengdu Metro Line 2.
- Proposed a distance-decay analytical framework to delineate catchment boundaries of metro stations for diverse transport modes, identifying critical thresholds to optimize multimodal connectivity in urban planning.

HONOR & AWARDS

- Third Prize of the 19th China Post-Graduate Mathematical Contest in Modeling Jan. 2023
- Second Prize of China Undergraduate Mathematical Contest in Modeling (CUMCM) Nov. 2020
- Third Prize of Chinese Competition of Transport Science and Technology (NACTranS) Nov. 2020
- First Prize in the Chinese Mathematics Competitions for Undergraduates (Sichuan Sub-venue) Nov. 2019

SKILLS & MISCELLANEOUS

- **Skills:** Python (Pandas, Numpy, PyTorch, Networkx), ArcGIS, SPSS, Matlab, MySQL
- **Machine Learning:** Deep Learning (CNN, RNN, Transformers, GNNs), Deep Reinforcement Learning
- **Languages:** Chinese (Native), English
- **Big data analytics and visualization methods | Cross-domain Data Fusion**