

# Kangyu LIANG

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**Research interests:** travel behaviour analysis, machine learning, urban science

## EDUCATION & COURSES

09/2022-06/2025 *M.Eng. Transportation Planning and Management* GPA: 84.5/100  
Beijing Jiaotong University (211)

09/2018-06/2022 *B.Eng. Transportation Engineering* GPA: 89.2/100  
East China Jiaotong University

- Triple A Student (2020), First Class Scholarship (top 3%)

## PUBLICATION

[1] Kangyu Liang, Yongsheng Zhang\*, Enjian Yao, "A Method for Predicting Real-Time Carriage-Level Alighting Flow Based on Train Weighing Data by Incorporating Correlations Among Carriages," in *IEEE Sensors Journal*, vol. 24, no. 13, pp. 21604-21613, 1 July 1, 2024. (SCI, IF=4.3, JCR Q1)

[2] Yongsheng Zhang, Kangyu Liang\*, Enjian Yao, Mingyi Gu, "Measuring Reliable Accessibility to High-Speed Railway Stations by Integrating the Utility-Based Model and Multimodal Space-Time Prism under Travel Time Uncertainty," in *ISPRS International Journal of Geo-information*. 13(263), 2024, pp.1-14. (SCI, IF=2.8, JCR Q2)

[3] Kangyu Liang, Yongsheng Zhang, Zhouhang Li. Analysis on Railway Station Choice Behaviour Affected by Urban Transport Accessibility in a City with Multiple Stations. *ITS World Congress*.

[4] Yongsheng Zhang, Kangyu Liang\*. Measuring Dynamic Accessibility by Metro System Under Travel Time Uncertainty Based on Smart Card Data. *Journal of Transport Geography* (Under Submission)

## RESEARCH EXPERIENCES

01/2022-7/2024 *Regional Combined Travel Decision-Making Mechanism Under Time Uncertainty based on Multi-Source Data*

**Fund:** National Natural Science Foundation of China.

**Advisor:** Prof. Yongsheng Zhang.

1. Using Google Maps, travel time data for various transportation modes were crawled over a week, and a reliable space-time prism was constructed under travel time uncertainty.
2. Developed a utility-based model to explore perceived impedance and travel behaviour when choosing a travel mode.
3. Integrated the utility-based model and the space-time prism to measure and evaluate accessibility within Beijing's Fifth Ring Road.

**Outcome:** Published a research article as the corresponding author in the *International Journal of Geo-information*. DOI: <https://doi.org/10.3390/ijgi13080263>

04/2023-03/2024 *Short-Term Metro Passenger Demand Prediction based on Multi-Source Data*

**Fund:** The Fundamental Research Funds for the Central Universities.

**Advisor:** Prof. Yongsheng Zhang.

1. Extracted the carriages' alighting flow and in-vehicle flow in different time periods based on train schedule data and train weighing data.
2. Developed an alighting flow monitor algorithm and built a multi-channel Conv-LSTM model to predict the carriages' alighting flow.
3. Evaluated the model on Guangzhou metro line 14 and assessed the usage of each carriage.

**Outcome:** Published a research article as the first author in the *IEEE Sensors Journal*. DOI: 10.1109/JSEN.2024.3397703

## PATENTS

LIANG, K<sup>2</sup>. (2020, December 10). CN112418556A - Gridding Service System Based on Internet Sharing Platform

LIANG, K<sup>2</sup>. (2020, January 30). CN11232014B - Method for Detecting Switch Tongue Clinging to Stock Rail

## SOFTWARE COPYRIGHTS

LIANG, K<sup>3</sup>. Highway Vehicle Safety Speed Limit Early Warning System Based On Internet of Vehicles V2I

LIANG, K<sup>3</sup>. Smart Car Forward Collision Avoidance System Based on Internet of Vehicles V2X

## OTHER SKILLS & ACHIEVEMENTS

### Achievements:

- Outstanding Student Paper Award at the International Symposium on Intelligent Construction and Smart Engineering of Transportation Infrastructure in 2023.
- Provincial First Prize for National Mathematical Modelling Competition in 2020.
- National Second Prize in the National English Competition for College Students in 2019.
- Provincial Second Prize for Certificate Authority Cup International Mathematical Contest In Modelling in 2019.

**IT:** MS Office, Python, MATLAB, Visio, C.

**Languages:** Chinese (native), English (CET6:529)

**Hobbies:** Swimming, climbing, traveling, Weiqi.