

Sijie Liu

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Research Interests: Transport Planning, Future Mobility, Smart City, Traffic Big Data

Education Background

The University of Manchester	07/2021 - 07/2022
MSc in Urban Design and International Planning	GPA: Distinction
Hebei University of Technology (211 Project)	09/2016 - 06/2020
BEng in Civil Engineering	GPA: 3.26/4.0 85/100 (Top 15%)

Work Experience

Tianjin Municipal Engineering Design and Research Institute **12/2022-12/2024**
Transportation Planning Engineer Department of Integrated Transport Development & Research
Focus Areas: Public Transportation, Traffic Modeling and Simulation,
Multi-Source Data Processing, Transport Planning and Consultancy

Publications

- **Liu, S., Yuan, F., Yang, Y., Wang, J., (2023).** ‘Reforming England's Infrastructure Planning System from a Neoliberal Perspective’ . *Urban and Regional Planning*. 8(3), pp48-51.
- **Liu, S. (2024).** ‘K-means clustering study of orbital TOD based on the 6D framework’. *Urban Rail Transit*. (During review)

Patent

- **Patent for invention:** “A process clustering based cellular phone data dwell point identification”
- **Patent for invention:** “Method for assessing supply and demand of taxis based on a service acquisition index”
- **Patent for software:** “Railway congestion index evaluation system”
- **Patent for software:** “Public transport accessibility index service system”

Research Experience

Tianjin Public Transport Spatial Planning and Bus Network Optimization

Government Funding

Apr. 2024 - Sep. 2024

- Tianjin was subdivided into 1,200 traffic zones, and a macro transport and Logit model was used to forecast residential transport trips for 2035. (TransCAD / ArcGIS Pro)
- Cleaned bus IC card data and GPS records to calculate passenger OD and clarified geospatial relationships. (Python)
- Planned comprehensive land development for bus parking stations.
- Developed 224 bus route optimization plans. (Vissim)

Study on Support Policies for Tianjin-Beijing Cross-City Commuters

National Strategies / Government funding

Mar.2024 - May. 2024

- Within the framework of the national strategy for the integration of the Beijing-Tianjin-Hebei urban agglomeration, policies are being implemented to support long-distance cross-city commuters.
- Utilized cellular phone data to identify the residences, workplaces, and travel modes of daily commuters between Beijing and Tianjin. (Python)
- Optimized railway scheduling and grouping, and provided home-buying support for cross-city commuters.

Capacity Measurement and Spatial Distribution of Shared Bicycles

Tianjin Transport Science Development Project

Mar.2023 - May. 2023

- Using a market equilibrium model and a demand measurement model, incorporating spatial and temporal data, the required number of 340,000 shared bicycles was calculated for a population of 7.8 million in the central city. (Tableau / ArcGIS Pro)

K-means clustering analysis of orbital TOD based on the 6D framework

Distinction Dissertation

Jun.2022 - Sep. 2022

- Conducted an evaluation of TOD using the latest 6D framework.

- The framework encompasses approximately 25 variables, which are statistically clustered using an improved K-means algorithm to accurately identify development weaknesses and provide recommendations for improvement.

Awards

Scholarships:

- Hebei University of Technology Scholarship 2017, 2018, 2019, 2020 (Top 20%)

Competitions and Activities:

- Student Innovation Award: "Research on Double-Deck Deformed Bridge for Traffic Congestion Relief"
- Second Prize of Hebei Province Engineering Survey Industry
- Third Prize of Hebei Province Surveying and Mapping Science

Honorary Titles:

- Outstanding Graduate, Hebei University of Technology
- Outstanding Student Council President

Skills

Computer Skills: ArcGIS Pro, SPSS, Trans CAD, Vissim, Tableau, Python