CURRICULUM VITAE

Wenlong Li
Master's Candidate
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RESEARCH INTERESTS

- Traffic Electrification
- System Optimization
- Network Modeling

EDUCATION

Beijing University of Technology Sep. 2022 — Present
Transportation Engineering (GPA:89.02/100 Rank:6/36)

East China Jiaotong University Sep. 2018 — Jul. 2022
Transportation Engineering (GPA:3.99/5 Rank:1/70)

ACADEMIC EXPERIENCE

Robust optimization of electric bus systems Oct. 2023 — Present

- Overview: When optimizing electric bus systems, it's important to acknowledge that the remaining battery state of charge is uncertain in real-world scenarios due to unpredictable energy consumption. Developing a robust optimization model based on deterministic models is necessary, better aligning with practical applications.

Integrated optimization of electric bus systems Jul. 2022 — Aug. 2023
Supervised by Dr. Yi He and Prof. Zhengbing He

- Overview: Dynamic Wireless Charging (DWC) technology enables battery electric buses (BEBs) to charge in motion, extending the operational range of BEBs. In practical applications, the deployment of DWC facilities is a critical issue. Additionally, it's essential to consider optimal battery capacity and charging scheduling under time-of-use mechanisms for BEBS. Therefore, a comprehensive model is proposed for optimizing the deployment of DWC facilities within an electric bus system. The model is validated using actual bus routes from Beijing. The results illustrate that the integrated model reduces the overall cost by 10.98% compared to current research methods.

Optimization of urban subway network expansion Oct. 2021 — Jun. 2022
Supervised by Prof. Zhengbing He

- Overview: Existing research methods for urban metro network design largely rely on expert guidance, which affects the commuting patterns of the entire city. A reinforcement learning-based method was proposed for city metro network expansion. It introduces a reward mechanism focused on bus stations as reward points to promote transferring efficiency and follow the TOD mode.

PUBLICATIONS

Journal publication

1. **Li, W.**, He, Y., Hu, S., He, Z., Planning dynamic wireless charging infrastructure for battery electric bus systems with the joint optimization of charging scheduling, Transportation Research Part C, 159 (2024) 104469, 2024.

Presentations & Posters

1. **Li, W.**, He, Y., Hu, S., He, Z., Planning dynamic wireless charging infrastructure for battery electric bus systems with the joint optimization of charging scheduling, Transportation Research Board 103rd Annual Meeting (2024), Washington DC.

SELECTED COURSES

Master's Courses

- Transportation Network Analysis
- Transportation System Optimization
- Transportation Economics
- Traffic Flow Theory
- Machine Learning

Bachelor's Courses

- Transportation System Analysis
- Traffic Engineering
- Transportation Design and Planning
- Transportation System Simulation
- Automatic Control Principle

AWARDS

- **2024.06** First-Class Graduate Technological Innovation Award, Beijing University of Technology
- **2022.07** Outstanding Undergraduate Thesis (113/5000+), East China Jiaotong University
- **2020.12** First Prize in (CUMCM) Jiangxi Province Contest, Jiangxi, China

SKILLS

- **Language:** Chinese (native), English (IELTS: 6.5)
- **Programming Language:** GAMS, Julia (JuMP), Python (pandas, numpy)
- **Writting Tools:** LaTeX, Visio
- **Others:** Vissim, SUMO, AutoCAD, TransCAD, SketchUp

Updated October 1, 2024