ZEYU LIN

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EDUCATION

Shanghai Jiao Tong University (SJTU) *Sep 2023 - Jun 2026 (expected)*
M.S. in Industrial Engineering
Advisor: Yaoming Zhou, Tangbin Xia
Related courses: Advanced Operations Research (A), Optimization Method.

Shanghai Jiao Tong University (SJTU) *Sep 2019 - Jun 2023*
B.E. in Industrial Engineering
GPA: 3.7/4.3 (87/100 TOP 15/58)
Related courses: Service Management (A+), Logistics and Supply Chain (A+), Production Planning and Control (A), Stochastic Models (A), Probability and Statistics (A).

RESEARCH INTERESTS

I am interested in Operations Research&Management, Networked Game, Resource Allocation, Shared mobility, Sharing Economy, On-demand Platform.

RESEARCH EXPERIENCE

Crowd-sourcing Operation in Rental Network Competition [1] Jun 2023 – Present
Supervisors: Prof. Ying-Ju Chen and Prof. Yaoming Zhou Shanghai Jiao Tong University

- Built a Networked Cournot model to study competition under crowd-sourced labor in rental networks.
- Analyzed firm profits, labor surplus, and consumer surplus under firm, crowd, and dual sourcing, using comparative statics to identify when crowd-sourced labor benefits different stakeholders.
- Independently completed model formulation, mathematical derivations, coding, and manuscript writing; paper currently R&R in *Manufacturing & Service Operations Management*.

Staff-Based Relocation and Swapping for E-Bike Sharing Systems [2] Sep 2021 – Nov 2023
Supervisors: Prof. Jiuh-Biing Sheu and Prof. Yaoming Zhou Shanghai Jiao Tong University

- Developed a staff-based operational strategy for e-bike sharing systems, integrating e-bike relocation and battery swapping through unified optimization.
- Modeled e-bike and battery station dynamics with a Markov chain, tracking fleet size and battery levels.
- Proposed an adaptive one-step Markovian strategy and a globally optimal rolling-horizon strategy, achieving over 20% profit improvement against industrial baselines in real-world simulations.
- Independently responsible for data pre-processing, model formulation, algorithm design, and drafting the manuscript. Published in *Transportation Research Part B: Methodological* with 30+ citations.

User-Based Relocation for E-Bike Sharing Systems [3], [4] Sep 2023 – May 2025
Supervisors: Prof. Yaoming Zhou Shanghai Jiao Tong University

- Developed a user-incentive mechanism with power-level recommendations to complement staff-based relocation for e-bike sharing system operation.
- Formulated a multi-battery-state Markov model and devised a variable neighborhood search algorithm; empirical validation on real-world data demonstrated profit gains of up to 12.6%.
- Responsible for data pre-processing, model formulation, algorithm design, and drafting the manuscript. Published one paper in *IEEE Transactions on Intelligent Transportation Systems* and one paper submitted to *Transportation Research Part B: Methodological*.

E-Bike Allocation Optimization in Competitive Markets Sep 2023 – Present
Supervisors: Prof. Yaoming Zhou; Industry Partner: HelloBike Shanghai Jiao Tong University

· Collaborated with HelloBike (Shanghai) for data access and validation, I developed an RL–based allocation strategy in competitive e-bike sharing markets. Collected real-time competitor e-bike distribution via Bluetooth sniffing and trained RL models to optimize the firm's own fleet deployment.

Proactive Dispatching for Semiconductor OHT Systems Dec 2025 – Present
Supervisors: Prof. Zuo-Jun (Max) Shen The University of Hong Kong

· Collaborated with TCL to optimize Overhead Hoist Transport (OHT) scheduling in semiconductor fabrication. Developed a proactive empty vehicle repositioning strategy that pre-deploys idle vehicles to future demand nodes, reducing system latency.

PUBLICATIONS

[*:Advisor]

[1] **Zeyu Lin**, Y. Zhou*, and Y.-J. Chen, "Who benefit from crowd-sourcing in rental network competition," *Manufacturing & Service Operations Management (MSOM)*, 2025, *Reject & Resubmit Invited*.

[2] Y. Zhou*, **Zeyu Lin**, R. Guan, and J.-B. Sheu, "Dynamic battery swapping and rebalancing strategies for e-bike sharing systems," *Transportation Research Part B: Methodological*, 2023. DOI: 10.1016/j.trb.2023.102820.

[3] R. Guan, **Zeyu Lin**, Y. Zhou*, and Z. Zhu, "User-based relocation for e-bike sharing systems through power-level recommendation," *IEEE Transactions on Intelligent Transportation Systems*, 2025. DOI: 10.1109/TITS.2025.3564359.

[4] R. Guan, **Zeyu Lin**, Y. Zhou*, and J.-B. Sheu, "Towards sustainable urban mobility: User-collaborative battery swapping for shared electric micromobility," *Transportation Research Part B: Methodological*, 2025, *Submitted* (Manuscript No. TRB-D-25-01174).

DATA ASSETS

Large-Scale Private Shared Micromobility Dataset *2023 – Present*
Scope: Bike/E-Bike data across three rival platforms in Xiamen, China. Over 50GB of high-frequency transactional data, continuously updated. Enables unique empirical studies on networked competition, platform pricing strategies, and fleet rebalancing dynamics.

HONORS

Scholarship, awarded by the School of Mechanical Engineering, SJTU *2024*
Scholarship, awarded by 'Chun-Tsung' Scientific Research Fund *2021*
First Prize, China Mechanical Engineering Innovation and Creativity Competition *2023*
First Prize, China Industrial Engineering Application Case Competition *2021*
First Prize, 'Toyota Cup' National Industrial Engineering Innovation Competition *2020*
Second Prize, Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM) *2021*

TEACHING EXPERIENCE

Teaching Assistant, *Production System Modeling and Simulation* *2024 – Present*
Assisted in teaching, grading, and mentoring student projects in modeling and simulation.

PROJECT EXPERIENCE

Project Leader, *Optimization of Modular Transit System ('Magic Bus')* *2023 – 2024*
Selected as the Official Case Study for the Top-tier IEOR Competition in China

· Pioneered a dynamic scheduling framework for a novel Modular Transit System, featuring the groundbreaking capability to seamlessly couple and decouple modules en route to flexibly adapt to real-time passenger demands.

· Developed a Meta-heuristic Algorithm to solve the complex resource allocation and vehicle routing problem, effectively balancing operational profit with passenger satisfaction.