Curriculum Vitae

Zheyong Bian (Ph.D.)

Assistant Professor
Supply Chain and Logistics Technology
Department of Construction Management
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ACADEMIC EMPLOYMENT

2020/9 - Present	Assistant Professor, University of Houston
2020/6 - 2020/8	Postdoctoral Associate, Rutgers University
2016/1 - 2020/5	Graduate Research and Teaching Assistant, Rutgers University
2013/9 - 2016/1	Graduate Project and Teaching Assistant, Tianjin University

EDUCATION EXPERIENCE

2018 - 2020	**Philosophy of Doctor** Rutgers, The State University of New Jersey Transportation Engineering
2016 - 2018	**Master of Science** Rutgers, The State University of New Jersey Transportation Engineering
2013 - 2016	**Master of Engineering** Tianjin University Industrial Engineering
2009 - 2013	**Bachelor of Science** Tianjin University Industrial Engineering

RESEARCH INTEREST

Applications: Smart Shared Mobility, Supply Chain Management and Logistics, Maritime Transportation, Transportation Infrastructure Management, Railway Transportation

Methodologies: Mechanism Design, Data Analysis, Operations Research, Optimization Theory, Algorithm Development.

TEACHING INTEREST

Transportation Engineering, Transportation Safety and Risk Analysis, Optimization in Transportation, Introduction of Rail Transportation

HONORS AND AWARDS

2019	Rutgers Doctorial Fellowship
2018	ASME Rail Transportation Division (RTD) Joint Rail Conference "Best Paper" Recommendation
2017	ASME Rail Transportation Division (RTD) Graduate Student Conference Scholarship
2016	National Scholarship
2016	"Outstanding Graduate" of College of Management and Economics, Tianjin University
2013	Weichai Power Scholarship of Tianjin University
2013	"Self-improvement Advanced Individual" Scholarship of Tianjin University

THESISES/DISSERTATIONS

2019 Ph.D.	Mechanism Design for First-mile Ridesharing: Matching, Routing, and Incentivizing
2017 M.S.	Operational-level Optimization for Dynamic and Stochastic Orienteering Problem
2016 M.E.	Two Novel Improved Strategies for Meta-heuristic Algorithms in Solving Route-related Problems for Supply Chain Management
2013 B.S.	Transportation Planning for Inbound Logistics in Supply Chain Management

PUBLICATIONS

Peer-reviewed Journal Articles

1. **Bian, Z.** and Liu, X. Mechanism Design for On-Demand First-Mile Ridesharing. Submitted to Transportation Research Part B: Methodological, Accepted for Publication.

2. **Bian, Z.,** Zhang, Z. and Liu, X. Unobserved Component Model for Predicting Monthly Traffic Volume." Journal of Transportation Engineering, Part A: Systems 145.12 (2019): 04019052.

3. **Bian, Z.** and Liu, X., 2019. Mechanism design for first-mile ridesharing based on personalized requirements part I: Theoretical analysis in generalized scenarios. Transportation Research Part B: Methodological, 120, pp.147-171.

4. **Bian, Z.** and Liu, X., 2019. Mechanism design for first-mile ridesharing based on personalized requirements part II: Solution algorithm for large-scale problems. Transportation Research Part B: Methodological, 120, pp.172-192.

5. **Bian, Z.** and Liu, X., 2018. A real-time adjustment strategy for the operational level stochastic orienteering problem: A simulation-aided optimization approach. Transportation Research Part E: Logistics and Transportation Review, 115, pp.246-266.

6. Lin Y., **Bian, Z.* (Corresponding author)**, and Liu, X., 2016. Developing a dynamic neighborhood structure for an adaptive hybrid simulated annealing–tabu search algorithm to solve the symmetrical traveling salesman problem. Applied Soft Computing, 49, pp.937-952.

7. Lin, Y., **Bian, Z.* (corresponding author)**, Sun, S. and Xu, T., 2015. A two-stage simulated annealing algorithm for the many-to-many milk-run routing problem with pipeline inventory cost. Mathematical Problems in Engineering, 2015.

8. Deng, J., Liu, X., Jing, G. and **Bian, Z.**, 2018. Probabilistic risk analysis of flying ballast hazard on high-speed rail lines. Transportation Research Part C: Emerging Technologies, 93, pp.396-409.

9. Ma, X., Dong, H., Liu, X., Jia, L., Xie, G. and **Bian, Z.**, 2018. An optimal communications protocol for maximizing lifetime of railway infrastructure wireless monitoring network. IEEE Transactions on Industrial Informatics, 14(8), pp.3347-3357.

10. Qi, E., Duan, Q., **Bian, Z.** and Shi, Y., 2015. VI-based optimization model of layout of guidance sign in multilayer space. Computer Integrated Manufacturing Systems, 9, p.031.

Peer-reviewed Conference Papers

- **Bian, Z.** and Liu, X., 2018. A Detour-Based Pricing Mechanism for First-Mile Ridesharing in Connection with Rail Public Transit. In 2018 Joint Rail Conference. American Society of Mechanical Engineers.

- Zhang, Z., Liu, X. and **Bian, Z.**, 2018. Analysis of Restricted-Speed Accidents Using Fault Tree Analysis. In 2018 Joint Rail Conference. American Society of Mechanical Engineers.

- Zhang, Z., Liu, X. and **Bian, Z.**, 2018. Analysis of Restricted Speed Related Train Accidents in the United States, 2000 to 2016. In 2018 Joint Rail Conference. American Society of Mechanical Engineers.

- Turla, T., Liu, X., Zhang, Z. and **Bian, Z.**, 2018. Analysis of Train Collision Risk in the United States: 2001 to 2015. In 2018 Joint Rail Conference. American Society of Mechanical Engineers.

- **Bian, Z.** and Liu, X., 2017. Planning the Ridesharing Route for the First-Mile Service Linking to Railway Passenger Transportation. In 2017 Joint Rail Conference. American Society of Mechanical Engineers.

Working papers

- **Bian, Z.* (Corresponding author)**, Wang, B., and Mansouri, M. Self-adaptive Optimization Strategies for Dynamic and Stochastic Orienteering Problem in Autonomous Transportation System, Submitted to Computers & Operations Research, Under Review.

- **Bian, Z.** and Liu, X. A Hybrid Mechanism for Mixed Scheduled and On-demand Dynamic First-Mile Ridesharing, Draft Ready. Plan to submit to the journal of "Transportation Science".

- Zhang, Z., Liu, X., and **Bian, Z**. Analysis of Freight Train Derailment Rates for Unit Trains and Manifest Trains, Submitted to Transportation Research Board (2021), Under Review.

- Bai, Y., and **Bian, Z.** Optimal Infrastructure Maintenance Decisions to Minimize Life Cycle Cost Using Markov Decision Process Model. Submitted to Transportation Research Board (2021), Under Review.

- **Bian, Z.**, Bai, Y., and Liu, X. Optimization for Multi-year Maritime Channel Dredging Plan. Completed modeling and analysis. Plan to submit to the journal of "Transportation Research Part C: Emerging Technologies".

- **Bian, Z.** Generalized Optimal Mechanism Design for Collaborative Transportation. In preparation. Plan to submit to the journal of "Transportation Science".

PRESENTATIONS

- Liu, X. and **Bian, Z.** (invited) Mechanism Design for Ridesharing, *Conference of Building the Future: Smart Cities & New Technological Frontiers*, Princeton University, 2019
- **Bian, Z.** and Liu, X. Planning the Ridesharing Route for the First-Mile Service Linking to Railway Passenger Transportation. Joint Rail Conference. American Society of Mechanical Engineers, 2017
- **Bian, Z.** and Liu, X. A Detour-Based Pricing Mechanism for First-Mile Ridesharing in Connection with Rail Public Transit. Joint Rail Conference. American Society of Mechanical Engineers, 2018

RECORD OF RESEARCH FUNDING

2019 - Present	"Risk Analysis Methodology for Hazardous Material Unit and Manifest Trains" USDOT, Federal Railroad Administration
2019 - Present	"Development and Testing of New Materials for Improvement of Thermal Protection Systems to Mitigate Rail Transportation Risk of Flammable Liquids" USDOT, Pipeline and Hazardous Materials Safety Administration (PHMSA)
2018 - Present	"Maritime Asset Management Tool for Life Cycle Cost Modeling" New Jersey Department of Transportation
2017 - Present	"Artificial Intelligence-Aided Broken Rail-Caused Derailment Risk Analysis" USDOT, Federal Railroad Administration
2016 - 2020	"Mechanism Design for First-Mile Ridesharing: Matching, Routing, and Pricing" Rutgers University
2013 - 2014	"Supply Chain Management for New Hope Liuhe Feed Factory Inbound Logistics" New Hope Liuhe Corporation

AD-HOC JOURNAL REVIWER

- Applied Soft Computing
- Transportation Research Records
- Transportation Research Part B: Methodological
- Transportation Research Part D: Transport and Environment
- Transportation Research Part C: Emerging Technologies
- Computers and Electronics in Agriculture
- IEEE Intelligent Transportation Systems Magazine

- Joint Rail Conference

COMPUTER SKILLS

Matlab, GAMS, AIMMS, R, Python, C++