Hang Zhou

Curriculum Vitae

Personal Information

Email hzhou364@wisc.edu

Websites Homepage, Google Scholar, ORCID, Web of Science

Research Interests Automated vehicle evaluation and control; Applications of AI and optimization in the intelligent transportation system

Education

2023-Present **Ph.D. Candidate,** Major in Transportation Engineering, Minor in Computer Science

University of Wisconsin-Madison, Department of Civil and Environmental Engineering.

- GPA: 3.86/4.00
- Advisors: Xiaopeng (Shaw) Li
- Dissertation: A data-driven pipeline for the safety evaluation of production automated vehicles
- Core Courses: Introduction to Neural Network (A) & Matrix Methods in Machine Learning (A) & AI and Data Science in Transportation (A)

2023-2025 **Master of Science (Research),** Major in Transportation Engineering,

University of Wisconsin-Madison, Department of Civil and Environmental Engineering.

- GPA: 4.00/4.00
- Thesis: Modular robot routing, planning, and control
- Core Courses: Transportation Operations (A) & Traffic Control (A) & Advanced Traffic Modeling and Computer Simulation (A)

2019-2023 **Bachelor of Management,** Major in Management Science,

Huazhong University of Science & Technology, School of Management.

- GPA: 3.95/4.00
- Advisors: Hu Qin and Chun Cheng
- Thesis: An exact algorithm for the multi-visit traveling salesman problem with drone
- Core Courses: Operations Research(I)(II) (96, 96) & Operational Management (86) & Business Data Analysis and Mining (A)

Working Experience

2023-Present **Graduate Research Assistant,** University of Wisconsin-Madison.

2025-Present **Graduate Teaching Assistant,** University of Wisconsin-Madison.

- Instructor for graduate-level course 574 Traffic Control in Fall 2025.

Journal Papers

*: Corresponding authors.

- **Zhou, H.**, Ma, C., Shen, S., Liang, Z., & Li, X. (2025). Towards full-scenario safety evaluation of automated vehicles: A volume-based method. *Transportation Research Part C: Emerging Technologies*. Accepted. [Link] [Code]
- Long, K., Liang, Z., **Zhou, H.**, & Li, X. (2025). Vehicle trajectory dataset based on unmanned aerial vehicles videos. *IEEE Intelligent Transportation Systems Magazine*. Accept. [Code]
- Zhang, Y., Ma, K., Xu, Z., **Zhou, H.**, Ma, C., & Li, X. (2025). A modeling methodology for car-following behaviors of automated vehicles: Trade-Off between stability and mobility. *Transportation Research Part B: Methodological*, 200, 103316. [Link]
- Cai, X., **Zhou, H.**, Ma, C., Li, X., & Ran, B. (2025). Evaluating impacts of public transit and automobiles during connected automated vehicle adoption. *Journal of Advanced Transportation*, 2025(1), 4103948. [Link] [Code]
- Zhang, P., Huang, H., **Zhou, H.**, Shi, H., Long, K., & Li, X. (2025). Online adaptive platoon control for connected and automated vehicles via physical enhanced residual learning. *Transportation Research Part C: Emerging Technologies*, 178, 105242. [Link] [Code]
- **Zhou, H.**, Zhang, P., Liang, Z., Li, H., & Li, X. (2025). Coverage trajectory planning problem on 3D terrains with safety constraint for automated lawn mower: Exact and heuristic approaches. *Robotics and Autonomous Systems*, 105109. [Link] [Code]
- Liang, Z., Ma, C., **Zhou, H.**, Long, K., & Li, X. (2025). An analytical eco-driving trajectory planning method with field test validation at intersections. *Transportation Research Part D: Transport and Environment*, 146, 104870. [Link] [Video]
- **Zhou, H.**, Ma, C., Cai, X., Ma, K., Li, X., & Ran, B. (2025). Security strategy against generalized inter-vehicle cyberattacks in car-following scenarios for connected and autonomous vehicles. *Transportation Research Part C: Emerging Technologies*, 178, 105216. [Link] [Code]
- Wang, J., Zhang, R.*, **Zhou, H.***, Huang, W., Feng, D., & Li, X. (2025). Optimization of asphalt mix design considering mixture performance, environmental impact, and life cycle cost. *Journal of Cleaner Production*, 145618. [Link]
- **Zhou, H.**, Ma, C., Ma, K., & Li, X. (2025). Quantile-based scenario generation for automated vehicle safety evaluation. *Accident Analysis & Prevention*, 218, 108043. [Link]
- Ma, C., **Zhou, H.**, Zhang, P., Ma, K., Shi, H., & Li, X. (2025). Safety assurance adaptive control in modular autonomous vehicles. *Communications in Transportation Research*, 5, 100204. [Link]
- Ma, K., **Zhou, H.**, Liang, Z., & Li, X. (2025). Automated vehicle microscopic energy consumption study (AV-Micro): Data collection and model development. *Energy*, 320, 135096. [Link] [Code]
- **Zhou, H.**, Li, Y., Ma, C., Long, K., & Li, X. (2025). Modular vehicle routing problem: Applications in logistics. *Transportation Research Part E: Logistics and Transportation Review*, 197, 104022. [Link] [Code]

- Hao, R., Liang, S., Zhai, Z., **Zhou, H.**, Wang, X., Li, X., & Guan, T. (2025). Privacy-preserving awareness in sensor deployment for traffic flow surveillance. *Computer-Aided Civil and Infrastructure Engineering*, 40, 1721–1732. [Link]
- **Zhou, H.**, Ma, K., Liang, S., Li, X., & Qu, X. (2024). A unified longitudinal trajectory dataset for automated vehicles. *Scientific Data*, 11, 1123. [Link] [Code]
- **Zhou, H.**, Qin, H., Cheng, C., & Rousseau, L. M. (2023). An exact algorithm for the two-echelon vehicle routing problem with drones. *Transportation Research Part B: Methodological*, 168, 124-150. [Link]
- **Zhou, H.**, Qin, H., Zhang, Z., & Li, J. (2022). Two-echelon vehicle routing problem with time windows and simultaneous pickup and delivery. *Soft Computing*, 26(7), 3345-3360. [Link] [Code]

Peer-Reviewed Conference Papers

- Ma, K., Zhang, Y., **Zhou, H.**, Liang, Z., & Li, X. (2025, May). Real-world automated vehicle longitudinal stability analysis: controller design and field test. In *2025 IEEE International Conference on Robotics and Automation (ICRA)* (pp. 1-7). IEEE. [Link]
- **Zhou, H.**, Huang, H., Zhang, P., Shi, H., Long, K., & Li, X. (2024, June). Online physical enhanced residual learning for connected autonomous vehicles platoon centralized control. In *2024 IEEE Intelligent Vehicles Symposium (IV)* (pp. 16-22). IEEE. [Link]
- **Zhou, H.**, Ma, K., & Li, X. (2024, June). A review on trajectory datasets on advanced driver assistance system equipped-vehicles. In *2024 IEEE Intelligent Vehicles Symposium (IV)* (pp. 1947-1952). IEEE. [Link]

Honors & Awards

10/2022 **Outstanding Undergraduates (merit)**, HUST.

03/2022 **The 1988th Alumni Association Scholarship (best research individual)**, HUST.

12/2021 **Third Prize,** HUST Outstanding Undergraduates Annual Meeting.

12/2021 **Yang Ye Alumni Scholarship**, HUST.

10/2020 **National Scholarship**, Ministry of Education of the People's Republic of China.

Additional Information

Blogs Github: my code repositories with 200+ stars.

CSDN: my blog to share technical articles with 100k+ page view.

Service Serve as an invited reviewer for journals including Transportation Research Part E: Logistics and Transportation Review, IEEE Transactions on Intelligent Transportation Systems, IEEE Intelligent Transportation Systems Magazine, Computers & Industrial Engineering, Transportation Research Board Annual Meeting, etc. Reviewed a total of 50+ papers.

Serve as a student volunteer for conferences such as the 2023 Workshop on Practical Applications of Intelligent Optimization and the 2nd Modified Asphalt Research Center Future Research Focus Workshop.