Lishengsa Yue, Ph.D.

Research Interest: Autonomous and Connected Vehicle, Advanced Driver Assistance System, Human Factor, Artificial Intelligence, Multi-Driver Simulator and Simulation, Traffic Safety
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EDUCATION

Ph.D. in Civil Engineering, 2017 – 2020, University of Central Florida, United States
Ph.D. in Transportation Engineering, 2014 – 2020, Tongji University, China
B.Sc. in Transportation Engineering (Ranked in top 5%), 2010 – 2014, Tongji University, China

EMPLOYMENT

- Associate Professor (2024 – Present): College of Transportation Engineering., Tongji University
- Assistant Professor (2022 – 2024): College of Transportation Engineering., Tongji University
- Postdoctoral Research Scholar (2020 – 2022): Civil & Environmental Engineering Dept., UCF

PROFESSIONAL SOCIETY MEMBERSHIPS & ACTIVITIES

Handling Editor, Transportation Research Record (2021-present)
Member, Committee on Human Factors of Vehicles (ACH30) (2022-2024)
Member, Committee on Vehicle Control and Intelligence in Chinese Association of Automation(2023-present)
Member, Committee on Intelligent Vehicle in Chinese Association of Automation(2024-present)
Member, Technical Committee of the Safety and Emergency Division of the World Transport Convention(2024-present)

FUNDED RESEARCH PROJECTS

1. Analysis of Driver Erroneous Interventions and Risk Prevention in Automated Driving (***PI***; *founded by National Natural Science Foundation of China; $70000;2026–2029*)
2. Sub-project of the National Key R&D Program (2024YFB2505503-3): Research on Scenario Data Structure Standardization and Privacy-Preserving Interaction and Invocation Technologies (***PI***; *founded by Ministry of Science and Technology of China; $99000;2025–2027*)
3. Mechanisms of Human–Machine Interaction and Driver Augmentation in Hazardous Driving Environments (***PI***; *founded by National Natural Science Foundation of China; $42000;2024–2026*)
4. Investigating the Effects of Cooperative Driving for CAVs in Different Driving Scenarios Using Multi-Driver Simulator Experiments (***PI****; founded by U.S. DOT University Transportation Center (SAFER-SIM), $95000; 2021-2022*)
5. Investigation of Merge Strategies at Ramp Area in Connected Vehicle Environment based on Multi-Driver Simulator System (***PI****; founded by U.S. DOT University Transportation Center (SAFER-SIM), $80000; 2020-2021*)
6. Improving Multimodal Traffic Safety for Multi-Lane Arterials (*Researcher; founded by Florida Department of Transportation, $440000;2020-2022*)

7. Investigating the Effects of Smartphone-based P2V Warning using Driving Simulator Experiments (***Lead researcher****; founded by U.S. DOT University Transportation Center (SAFER-SIM), $60000; 2019-2021*).
8. Investigation of Driving Behavior at Alternative Intersection Designs and Safety Improvement: A Driver Simulator Study (*Researcher; founded by U.S. DOT University Transportation Center (SAFER-SIM), $125627; 2019-2021*)
9. Assessing the Effectiveness of Connected Vehicle Technologies based on Driving Simulator Experiments (***Lead researcher****; founded by U.S. DOT University Transportation Center (SAFER-SIM); $50000, 2018-2020*).
10. Evaluation of Innovative Alternative Intersection Designs in the Development of Safety Performance Functions and Crash Modification Factors (***Lead researcher****; founded by Florida Department of Transportation, $486640; 2017-2020*).

SELECTED PUBLICATIONS

1. Li, Y., Wang, X., Wang, T., ***Yue, L***., & Liu, Q. (2026). Characteristics analysis of autonomous vehicle pre-crash scenarios. *Accident Analysis & Prevention*, *224*, 108285.
2. Ye, X., Wang, X., Chi, J., ***Yue, L***., & Quddus, M. (2025). Assessing the Readiness of Freeway Ramps for Automated Vehicles: A Software-in-the-Loop Simulation Study. *Transportation Research Record*, 03611981251346779.
3. Wei, Z., Wang, S., Peng, J., Li, Y., ***Yue, L***., & Li, Y. (2025). An Algorithm for Spatio-Temporal Trajectory Conflict Risk Identification in Intersections Considering Lateral Vehicle Movement. *IEEE Transactions on Intelligent Transportation Systems*.
4. Shi, J., Zhang, Z., ***Yue, L****., Jia, T., & Yufeng, Y. (2025, May). Improving Driving Performance in Difficult Driving Scenarios Using Personalized Real-Time Neurofeedback. In *International Conference on Human-Computer Interaction* (pp. 96-113). Cham: Springer Nature Switzerland.
5. Zhang, W., Zhang, F., Feng, Z., Zhou, H., ***Yue, L***., Xiong, L., & Cheng, Z. (2025). A coordinated control framework of freeway continuous merging areas considering traffic risks and energy consumption. *Accident Analysis & Prevention*, *212*, 107924.
6. Yan, Z., ***Yue, L****., Luo, W., & Sun, J. (2025). Real-time detection of road surface friction coefficient: A new framework integrating diffusion model and Transformer in Transformer algorithms. *Alexandria Engineering Journal*, *113*, 620-632.
7. Yan, Z., Saunier, N., ***Yue, L****., & Sun, J. (2025). Investigating and modeling crash risk for interactions between motorized and non-motorized in intersection center areas. *Traffic Injury Prevention*, 1-11.
8. Huang, Y., Lin, Y., ***Yue, L****., Yao, Z., & Wang, J. (2025). From Gaze to Movement: Predicting Visual Attention for Autonomous Driving Human-Machine Interaction based on Programmatic Imitation Learning. In *Proceedings of the IEEE/CVF International Conference on Computer Vision* (pp. 26146-26155).
9. Yin, H., ***Yue, L****., Gong, Y., Li, P., & Huang, Y. (2024). Personalized lane departure warning based on non-stationary crossformer and kernel density estimation. *Alexandria Engineering Journal*, *109*, 856-870.
10. Zhu, Y., ***Yue, L****., Zhang, Q., & Sun, J. (2024). Modeling distracted driving behavior considering cognitive processes. *Accident Analysis & Prevention*, *202*, 107602.
11. Li, P., Chen, S., ***Yue, L***., Xu, Y., & Noyce, D. A. (2024). Analyzing relationships between latent topics in autonomous vehicle crash narratives and crash severity using natural language

processing techniques and explainable XGBoost. *Accident Analysis & Prevention*, *203*, 107605.

12. Sun, Y., ***Yue, L****., Sun, Y., & Li, W. (2024). Adaptive Autonomous Driving Style Considering Human Trust. In *2024 8th CAA International Conference on Vehicular Control and Intelligence (CVCI)* (pp. 1-6). IEEE.
13. Yu, B., Gao, K., Cheng, Z., Chen, Y., & ***Yue, L***. (2024). A human-like visual perception system for autonomous vehicles using a neuron-triggered hybrid unsupervised deep learning method. *IEEE Transactions on Intelligent Transportation Systems*, *25*(7), 8171-8180.
14. ***Yue, L****., Abdel-Aty, M., Zaki, M. H., Zheng, O., Wu, Y., & Yu, B. (2024). Understanding e-bicycle overtaking strategy: insights from inverse reinforcement learning modelling. *Transportmetrica A: transport science*, *20*(2), 2168506.
15. Zheng, O., Abdel-Aty, M., ***Yue, L****., Abdelraouf, A., Wang, Z., & Mahmoud, N. (2024). Citysim: A drone-based vehicle trajectory dataset for safety-oriented research and digital twins. *Transportation research record*, *2678*(4), 606-621.
16. Zhu, Y., ***Yue, L****., & Sun, J. (2024). Modeling the Driver's Lane-Changing Decision Under the Influence of the Blind Zone Image of an Intelligent Vehicle: A Practice Based on Cognitive-Driven Large Language Model. In *2024 8th CAA International Conference on Vehicular Control and Intelligence (CVCI)* (pp. 1-6). IEEE.
17. Rao, H., Zhang, D., Qin, G., ***Yue, L***., & Sun, J. (2023). Investigating the intra-driver heterogeneity in car following behaviour based on large-scale naturalistic driving study. *Transportmetrica B: Transport Dynamics*, *11*(1), 1363-1383.
18. Yan, Z., ***Yue, L****., & Sun, J. (2023). High-resolution reconstruction of non-motorized trajectory in shared space: A new approach integrating the social force model and particle filtering. *Expert Systems with Applications*, *233*, 120753.
19. Tang, L., ***Yue, L***., Fu, A., Zhou, X., Sun, J., & Li, Z. (2023, October). Interactive vehicle trajectory prediction considering abnormal emotion based on SOR cognitive framework. In *2023 7th CAA International Conference on Vehicular Control and Intelligence (CVCI)* (pp. 1-7). IEEE.
20. Wang, Z., Abdel-Aty, M., ***Yue, L****., Zhu, J., Zheng, O., & Zaki, M. H. (2023). Investigating the Effects of Human–Machine Interface on Cooperative Driving Using a Multi-Driver Co-Simulation Platform. *IEEE Transactions on Intelligent Vehicles*, *9*(1), 2808-2821.
21. ***Yue, L****., Abdel-Aty, M., & Wang, Z. (2022). Effects of connected and autonomous vehicle merging behavior on mainline human-driven vehicle. *Journal of intelligent and connected vehicles*, *5*(3), 36-45.
22. Yin, L., Chen, X., & ***Yue, L.*** (2022). Extracting Overtaking Segments by Unsupervised Clustering and Predicting Non-motorized Vehicle's Trajectory, Journal of Advanced Transportation
23. Abdel-Aty, M., ***Yue, L****.*, Wu, Y., Zheng, O. (2022). Investigating the Effects of P2V Human-Machine Interface Design Using Driving Simulator Experiment, Transportation Research Record, 03611981221091552.
24. ***Yue, L****.,* Abdel-Aty, M., & Wang, Z. (2022). Effects of connected and autonomous vehicle merging behavior on mainline human-driven vehicle. Journal of Intelligent and Connected Vehicles, 5(1): 36-45.
25. ***Yue, L****.*, Abdel-Aty, M., Wu, Y., Jorge U., & Yuan, C. (2021). Effects of Forward Collision Warning in Different Pre-Crash Scenarios. Transportation Research Part F: Traffic Psychology and Behaviour, 76, 336-352.
26. Yuan, J., Abdel-Aty, M., Fu, J., Wu, Y., ***Yue, L.***, & Eluru, N. (2021). Developing safety performance functions for freeways at different aggregation levels using multi-state microscopic traffic detector data. Accident Analysis & Prevention, 151, 105984.

27. Lee, J., Mao, S., Abdel-Aty, M., Lian, Y., ***Yue, L.***, & Yun, I. (2021). Association between Truck Crashes due to Mechanical Failure and Truck Age. Journal of Advanced Transportation.
28. ***Yue, L****., Abdel-Aty, M. A., Wu, Y., & Yuan, J. (2020). An Augmentation Function for Active Pedestrian Safety System Based on Crash Risk Evaluation. IEEE Transactions on Vehicular Technology, 69(11), 12459-12469.
29. ***Yue, L****., Abdel-Aty, M., Wu, Y., Hasan, S., & Zheng, O. (2020). Identifying Pedestrian Crash Contributing Factors Using Association Analysis and Their Implications for Development of Active Pedestrian Safety System. Transportation research record, 2674(8), 861-874.
30. Yuan, J., Abdel-Aty, M. A., ***Yue, L***., & Cai, Q. (2020). Modeling Real-Time Cycle-Level Crash Risk at Signalized Intersections Based on High-Resolution Event-Based Data. IEEE Transactions on Intelligent Transportation Systems, 22(11), 6700-6715.
31. ***Yue, L****., Abdel-Aty, M., Wu, Y., Yuan, J., & Morris, M. (2020). Influence of Pedestrian-to-Vehicle Technology on Drivers' Response and Safety Benefits Considering Pre-Crash Conditions. Transportation Research Part F: Traffic Psychology and Behaviour, 73, 50-65.
32. ***Yue, L***., Abdel-Aty, M., Wu, Y., Zheng, O., & Yuan, J. (2020). In-depth Approach for Identifying Crash Causation Patterns and Its Implications for Pedestrian Crash Prevention. Journal of Safety Research, 73, 119-132.
33. Abdelrahman, A., Abdel-Aty, M., Lee, J., & ***Yue, L***. (2020). Evaluation of Displaced Left-Turn Intersections. Transportation Engineering, 100006.
34. Al-Omari, M. E. M. A., Abdel-Aty, M., Lee, J., ***Yue, L***., & Abdelrahman, A. (2020). Safety Evaluation of Median U-Turn Crossover-Based Intersections. Transportation Research Record, 0361198120921158.
35. ***Yue, L****., Abdel-Aty, M., Wu, Y., (2019) The Practical Effectiveness of Advanced Driver Assistance Systems at Different Roadway Facilities: System Limitation, Adoption and Usage. IEEE Transactions on Intelligent Transportation Systems, 21(9), 3859-3870.
36. ***Yue, L****., Abdel-Aty, M., Lee, J., & Farid, A. (2019). Effects of Signalization at Rural Intersections Considering the Elderly Driving Population. Transportation Research Record, 2673(2), 743-757.
37. Wu, Y., Abdel-Aty, M., Zheng, O., Cai, Q., & ***Yue, L***. (2019). Developing a Crash Warning System for the Bike Lane Area at Intersections with Connected Vehicle Technology. Transportation Research Record, 2673(4), 47-58.
38. ***Yue, L****., Abdel-Aty, M., Wu, Y., & Wang, L. (2018). Assessment of the Safety Benefits of Vehicles' Advanced Driver Assistance, Connectivity and Low Level Automation Systems. Accident Analysis & Prevention, 117, 55-64.
39. Chen, X., ***Yue, L****., & Han, H. (2018). Overtaking Disturbance on a Moped-Bicycle-Shared Bicycle Path and Corresponding New Bicycle Path Design Principles. Journal of Transportation Engineering, Part A: Systems, 144(9), 04018048.
40. Chen, X., ***Yue, L****., & Yang, K. (2017). Safety Evaluation of Overtaken Bicycle on a Shared Bicycle Path. Journal of Tongji University, 45(2), 215-222.

REVIEWER

- Accident Analysis and Prevention
- Transportation Research Part C
- Transportation Research Part A
- Transportation Research Part F

- IEEE Transactions on ITS
- IEEE Transactions on Intelligent Vehicles
- IEEE Transactions on Affective Computing
- IEEE Vehicular Technology Magazine
- IEEE Signal Processing Letters
- Engineering Applications of Artificial Intelligence
- Journal of Intelligent Transportation Systems: Technology, Planning, and Operations
- Journal of Transportation Engineering, Part A: Systems
- Journal of Safety Research
- Journal of Transportation Safety & Security
- Journal of Advanced Transportation
- Transportation Injury Prevention
- Transportmetrica B: Transport Dynamics
- Transportation Research Record