Qiqing Wang

CONTACT
INFORMATION

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Singapore 117576

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LinkedIn

RESEARCH
INTERESTS

1. Privacy-preserving transport data collaboration

2. Trustworthy AI for traffic control

3. Responsible data science in intelligent transportation systems

EDUCATION

National University of Singapore (NUS) — Singapore
Ph.D. in the Department of Civil & Environmental Engineering — 08/2022 - Present

- Advisor: Assistant Professor Kaidi Yang

Harbin Institute of Technology (HIT) — Harbin, China
B.Eng. in the School of Transportation Science and Engineering — 08/2018 - 08/2022

- Rank 2/28

University of Pennsylvania — Philadelphia, USA
Visiting student — 01/2019 - 03/2019

JOURNAL
PUBLICATIONS

[J1] Platoon-Centric Green Light Optimal Speed Advisory Using Safe Reinforcement Learning
Ruining Yang, Jingyuan Zhou, **Qiqing Wang**, Jinhao Liang, Kaidi Yang*
IEEE Transactions on Vehicular Technology, 2025

[J2] A Connected Vehicle-Based Contextual Stochastic Optimization Model for Real-time Traffic Signal Timing
Chaopeng Tan, **Qiqing Wang**, Jinhao Liang, Kaidi Yang*
IEEE Transactions on Intelligent Transportation Systems, 2025

[J3] Privacy-Preserving Data Fusion for Traffic State Estimation: A Vertical Federated Learning Approach   [Web], [Code]
Qiqing Wang, Kaidi Yang*
Transportation Research Part C: Emerging Technologies, 2024

CONFERENCE
PUBLICATIONS

[C1] Fostering Data Collaboration in Digital Transportation Marketplaces: The Role of Privacy-Preserving Mechanisms
Qiqing Wang, Haokun Yu, Kaidi Yang*
The 26th International Symposium on Transportation and Traffic Theory (ISTTT26), 2026

[C2] LLMs as Virtual Traffic Police: Incident-Aware Traffic Signal Control Augmented by Large Language Models
Qiqing Wang, Shiqi Wei, Kaidi Yang*
The IEEE International Conference on Intelligent Transportation Systems, 2025

[C3]	Traffic Signal Control via Vertical Federated Reinforcement Learning **Qiqing Wang**, Chaopeng Tan, Kaidi Yang* The Conference in Emerging Technologies in Transportation Systems, 2024
[C4]	Privacy-Preserving Data Fusion for Traffic State Estimation: A Vertical Federated Learning Approach (**Oral, Top 10%**) **Qiqing Wang**, Kaidi Yang* The 25th International Symposium on Transportation and Traffic Theory (ISTTT25), 2024

WORKING PAPERS

[W1]	Fostering Data Collaboration in Digital Transportation Marketplaces: The Role of Privacy-Preserving Mechanisms **Qiqing Wang**, Haokun Yu, Kaidi Yang* Transportation Research Part A: Policy and Practice, Second review
[W2]	Collaborating without Compromising Privacy: Traffic Signal Control via Offline Vertical Federated Reinforcement Learning **Qiqing Wang**, Shiqi Wei, Chaopeng Tan, Kaidi Yang* Working paper
[W3]	SynthAssist: Generating Privacy-Preserving Synthetic Transportation Data by Generative Agents **Qiqing Wang**, Jingyuan Zhou, Kaidi Yang* Working paper

HONORS AND AWARDS (SELECTED)

Best Paper Award, ISMT [1] 2025	11/2025
Best Student Paper Award Nomination, ITSC [2] 2025	11/2025
Best Presentation Award, The 14th APTE [3]	08/2025
Singapore ITSS x LTA Hackathon 2rd Place (**Top 2%, Team leader**)	04/2025
NUS Research Scholarship	08/2022
HIT Outstanding Graduates (**Top 10%**)	06/2022
China National Scholarship (**Top 1%**)	11/2020
Finalist in the Mathematical Contest in Modeling (**Top 5%**)	05/2020
HIT First Prize Academic Scholarship	06/2020
HIT Second Prize Academic Scholarship	12/2019, 12/2020
HIT Top 10 Student Leaders	12/2020
Poly Changda Scholarship	11/2019

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[1] The International Symposium on Multimodal Transportation
[2] The IEEE International Conference on Intelligent Transportation Systems
[3] The 14th Asia-Pacific Conference on Transportation and the Environment

ACADEMIC SERVICES	Organizer of invited session *Trustworthy Decision-Making and Control for Transportation Systems*, IFAC 2026
	Conference reviewer, IV 2026
	Session chair, The 2025 NUS-Tongji International Forum on Next-Generation Traffic Control Theory and Technology
	Organizer of invited session *Trustworthy AI for Traffic Sensing and Control*, ITSC 2025
	Conference reviewer, ITSC 2025

TEACHING EXPERIENCE	CE3121 *Transportation Engineering*, NUS, Teaching Assistant	2025
	CE5210 *Intelligent Transportation Systems and Simulation*, NUS, Teaching Assistant	2024
	CE5808 *Advanced Digital Construction*, NUS, Teaching Assistant	2024

STUDENT MENTORING	Shiqi Wei, B.S. student @NUS & Southeast University 3+1+1 program
	Lingxian Zhu, B.S. student @NUS & Southeast University 3+1+1 program
	Hangbo Xie, B.S. student @NUS & Chang'an University 3+1+1 program
	Yucheng Zhou, B.S. student @NUS & South China University of Technology 3+1+1 program
	Zijun Kang, M.S. student in CEE @NUS
	Bingbing Sun, M.S. student in CEE @NUS
	Tan Li, M.S. student in CEE @NUS
	Chung Tzu Chi, B.S. student in CEE @NUS
	Chongyu Wang, B.S. student in CEE @NUS

MEDIA	NUS CEE team (Traffic Doctor) wins 2nd Prize in the Intelligent Transportation Society (Singapore) ITSS-LTA Hackathon, NUS CDE Highlights, 2025
	A new model based on federated learning supports data collaboration between traffic authorities and mobility forms without compromising privacy, NUS College of Design & Engineering AI + X Research Newsletter, 2025