

# Kaidi Yang

Assistant Professor

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## Education

- 2019 Ph.D. in Civil Engineering (Transportation), ETH Zurich
- 2014 M.Sc. in Control Science and Engineering, Tsinghua University
- 2011 B.Eng. in Automation, Tsinghua University
- 2011 B.Sc. (Dual) in Pure and Applied Mathematics, Tsinghua University

## Position Held

- 2022- Assistant Professor, National University of Singapore
- 2019-2022 Postdoctoral Scholar, Stanford University

## Research Interest

Intelligent Transportation Systems, Smart Logistics, Traffic Flow and Control, Connected and Automated Vehicles, Shared Mobility

## Selected Publications (\* represents corresponding author)

For all publications, please refer to <https://scholar.google.com/citations?hl=en&user=gHv3iBUAAAAJ>.

- [1] Matthew Tsao, **Kaidi Yang**, Stephen Zoepf, and Marco Pavone. “Trust but Verify: Cryptographic Data Privacy for Mobility Management”. *IEEE Transactions on Control of Network Systems* (in press).
- [2] Igor Dakic, **Kaidi Yang\***, Monica Menendez, and Joseph Chow. “On the design of an optimal flexible bus dispatching system with modular bus units: Using the three-dimensional Macroscopic Fundamental Diagram.” *Transportation Research Part B: Methodologies*. 148 (2021): 38–59.
- [3] Biao Yin\*, Monica Menendez, and **Kaidi Yang**. “Joint Optimization of Intersection Control and Trajectory Planning Accounting for Pedestrians in a Connected and Automated Vehicle Environment.” *Sustainability* 13/3 (2021), 1135.
- [4] **Kaidi Yang\***, Mireia Roca-Riu, and Monica Menendez. “An auction-based approach for pre-booked urban logistics facilities.” *Omega: The International Journal of Management Science* 89 (2019): 193–211. (**Best Paper Award**)
- [5] **Kaidi Yang\*** and Monica Menendez. “Queue length estimation in a connected vehicle environment: A convex approach.” *IEEE Transactions on Intelligent Transportation Systems* 20/7 (2019): 2480–2496.

- [6] Haitao He, **Kaidi Yang\***, Hong Liang, Monica Menendez, and S. Ilgin Guler. “Providing public transport priority in the perimeter of urban networks: a bi-modal strategy.” *Transportation Research Part C: Emerging Technologies* 107 (2019): 171–192.
- [7] **Kaidi Yang**, Nan Zheng\*, and Monica Menendez. “Heterogeneity aware urban traffic control in a connected vehicle environment: A joint framework for congestion pricing and perimeter control.” *Transportation Research Part C: Emerging Technologies* 105 (2019): 439–455.
- [8] **Kaidi Yang\***, Monica Menendez, and S. Ilgin Guler. “Implementing transit signal priority in a connected vehicle environment with and without bus stops.” *Transportmetrica B: Transport Dynamics* 1 (2019): 423–445.
- [9] Gabriel Tilg, **Kaidi Yang\*** and Monica Menendez. “Evaluating the effects of automated vehicle technology on the capacity of weaving sections.” *Transportation Research Part C: Emerging Technologies* 96 (2018): 3–21.
- [10] **Kaidi Yang**, Nan Zheng\*, and Monica Menendez. “Multi-scale perimeter control approach in a connected-vehicle environment.” *Transportation Research Part C: Emerging Technologies* 94 (2018): 32–49.
- [11] Jiyuan Tan\*, Xiangyun Shi, Zhiheng Li, **Kaidi Yang**, Na Xie, Haiyang Yu, Li Wang, and Zhengxi Li. “Continuous and discrete-time optimal controls for an isolated signalized intersection.” *Journal of Sensors* 2017 (2017).
- [12] **Kaidi Yang\***, S. Ilgin Guler, and Monica Menendez. “Isolated intersection control for various levels of vehicle technology: Conventional, connected, and automated vehicles.” *Transportation Research Part C: Emerging Technologies* 72 (2016): 109–129.
- [13] Li Li\*, **Kaidi Yang**, Zhiheng Li, and Zuo Zhang. “The optimality condition of the multiple-cycle smoothed curve signal timing model.” *Transportation Research Part C: Emerging Technologies* 27 (2013): 46–57.

## Projects and Grants

- 2021-2022    Design and operation of AV-enabled mobility-on-demand systems  
Swiss National Science Foundation Postdoc Mobility (CHF 62,500)
- 2019-2020    Modeling and control of intermodal autonomous mobility-on-demand systems  
Swiss National Science Foundation Early Postdoc Mobility (CHF 81,500)

## Honor and Award

- 2020        Best Student Paper Award on IEEE Intelligent Transportation Systems Conference
- 2019        Chinese Government Award for Outstanding Self Finance Students Abroad
- 2019        Best Paper Award on OMEGA: The International Journal of Management Science

## Teaching Experience

- Autumn 17    Microscopic Modelling and Simulation of Traffic Operations, ETH Zurich

## Service

- Reviewer Editor    Frontiers in Future Transportation