

# Jiawei Zhang

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## EDUCATION

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**Tsinghua University**

Department of Automation

Ph.D student in Control Science and Engineering

*September 2020 - Present*

**Tsinghua University**

Department of Automation

B.S. of Engineering (Graduate with honor)

*September 2016 - June 2020*

## AREAS OF INTERESTS

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**Research Interests**

Artificial Intelligence, Autonomous Driving, Complex System, Intelligent Vehicle, Intelligent Transportation System, Deep Reinforcement Learning

## RESEARCH PUBLICATION

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1. **Jiawei Zhang**, Cheng Chang, Xianlin Zeng, Li Li. (2022). Multi-agent DRL-based lane change with right-of-way collaboration awareness. *IEEE Transactions on Intelligent Transportation Systems (TITS)*.  
doi: [10.1109/TITS.2022.3216288](https://doi.org/10.1109/TITS.2022.3216288) (SCI, IF: 9.551)
2. **Jiawei Zhang**, Shen Li, Li Li. (2023). Coordinating CAV swarms at intersections with a deep learning model. *IEEE Transactions on Intelligent Transportation Systems (TITS)*.  
doi: [10.1109/TITS.2023.3250704](https://doi.org/10.1109/TITS.2023.3250704) (SCI, IF: 9.551)
3. **Jiawei Zhang**, Cheng Chang, Zimin He, Wenqin Zhong, Danya Yao, Shen Li, Li Li. (2023). CAVSim: A microscopic traffic simulator for evaluation of connected and automated vehicles. *IEEE Transactions on Intelligent Transportation Systems (TITS)*.  
doi: [10.1109/TITS.2023.3273565](https://doi.org/10.1109/TITS.2023.3273565) (SCI, IF: 9.551)
4. **Jiawei Zhang**, Zhiheng Li, Li Li, Yidong Li, Hairong Dong. (2021). A bi-level cooperative operation approach for AGV based automated valet parking. *Transportation Research Part C: Emerging Technologies (TRC)*, 128, 103140. doi: [10.1016/j.trc.2021.103140](https://doi.org/10.1016/j.trc.2021.103140) (SCI, IF: 9.002)
5. **Jiawei Zhang**, Huaxin Pei, Xuegang(Jeff) Ban, Li Li. (2022). Analysis of cooperative driving strategies at road network level with macroscopic fundamental diagram. *Transportation Research Part C: Emerging Technologies (TRC)*, 135, 103503. doi: [10.1016/j.trc.2021.103503](https://doi.org/10.1016/j.trc.2021.103503) (SCI, IF: 9.002)
6. **Jiawei Zhang**, Jingwei Ge, Shu Li, Shen Li, Li Li. (2023). A Bi-level Network-wide Cooperative Driving Approach Including Deep Reinforcement Learning-based Routing. *IEEE Transactions on Intelligent Vehicles (TIV)*.  
doi: [10.1109/TIV.2023.3305818](https://doi.org/10.1109/TIV.2023.3305818) (SCI, IF: 8.2)
7. **Jiawei Zhang**, Cheng Chang, Huaxin Pei, Xinyu Peng, Yuqing Guo, Renzong Lian, Zhenwu Chen, and Li Li. (2022) CAVSim: A microscope traffic simulator for connected and automated vehicles Environment. In *2022 IEEE Intelligent Transportation Systems Conference (ITSC)*. pp. 3719-3724.  
doi: [10.1109/ITSC55140.2022.9922267](https://doi.org/10.1109/ITSC55140.2022.9922267) (EI)
8. Xinyu Peng, **Jiawei Zhang**, Fei-Yue Wang, Li Li. (2021). Drill the cork of information bottleneck by inputting the most important data. *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*. pp. 6360-6372. doi: [10.1109/TNNLS.2021.3079112](https://doi.org/10.1109/TNNLS.2021.3079112) (SCI, IF: 14.255)
9. Qiyuan Liu, **Jiawei Zhang**, Wenqin Zhong, Zhiheng Li, Xuegang (Jeff) Ban, Shen Li, Li Li. (2023). Fault-Tolerant cooperative driving at highway on-ramps considering communication failure. *Transportation Research*

10. Huaxin Pei, **Jiawei Zhang**, Yi Zhang, Huile Xu, Li Li. (2023). Self-Organized Routing for Autonomous Vehicles via Deep Reinforcement Learning. *IEEE Transactions on Vehicular Technology (TVT)*.  
doi: [10.1109/TVT.2023.3311198](https://doi.org/10.1109/TVT.2023.3311198) (SCI, IF: 6.8)
11. Cheng Chang, **Jiawei Zhang**, Kunpeng Zhang, Wenqin Zhong, Xinyu Peng, Shen Li, Li Li. (2023). BEV-V2X: Cooperative Birds-Eye-View Fusion and Grid Occupancy Prediction via V2X-Based Data Sharing. *IEEE Transactions on Intelligent Vehicles (TIV)*.  
doi: [10.1109/TIV.2023.3293954](https://doi.org/10.1109/TIV.2023.3293954) (SCI, IF: 8.2)
12. Shen Li, **Jiawei Zhang**, Zhenwu Chen, Li Li (2023). A Theoretical Analysis for Cooperative Driving at Idealized Non-Signalized Intersections. *Tsinghua Science and Technology*.  
doi: [10.26599/TST.2022.9010069](https://doi.org/10.26599/TST.2022.9010069) (SCI, IF: 6.6)
13. Huaxin Pei, **Jiawei Zhang**, Yi Zhang, Xin Pei, Shuo Feng, Li Li. (2022). Fault-tolerant cooperative driving at signal-free intersections. *IEEE Transactions on Intelligent Vehicles (TIV)*.  
doi: [10.1109/TIV.2022.3159088](https://doi.org/10.1109/TIV.2022.3159088) (SCI, IF: 5.009)
14. Jingwei Ge, **Jiawei Zhang**, Yi Zhang, Danya Yao, Zuo Zhang, Rui Zhou (2023). Autonomous vehicles testing considering utility-based operable tasks. *Tsinghua Science and Technology*.  
doi: [10.26599/TST.2022.9010037](https://doi.org/10.26599/TST.2022.9010037) (SCI, IF: 6.6)
15. Cheng Chang, Kunpeng Zhang, **Jiawei Zhang**, Shen Li, Li Li (2022) Driving safety monitoring and warning for connected and automated vehicles via edge computing. In *2022 IEEE Intelligent Transportation Systems Conference (ITSC)*. pp. 3940-3947.  
doi: [10.1109/ITSC55140.2022.9922076](https://doi.org/10.1109/ITSC55140.2022.9922076) (EI, Best Student Paper Award)
16. Jingwei Ge, Huile Xu, **Jiawei Zhang**, Yi Zhang, Danya Yao, and Li Li. (2022). Heterogeneous driver modeling and corner scenarios sampling for automated vehicles testing. *Journal of Advanced Transportation (JAT)*.  
doi: [10.1155/2022/8655514](https://doi.org/10.1155/2022/8655514) (SCI, IF: 2.249)

## HONORS & AWARDS

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| • Outstanding Ph.D Student (BEIJING ASSOCIATION OF AUTOMATION) | 2022             |
| • The First Prize Scholarship (Tsinghua-Xuancheng Scholarship) | 2022             |
| • Best Student Paper Award (IEEE ITSC 2022)                    | 2022             |
| • The Second Prize Scholarship (Tsinghua-Weihai Scholarship)   | 2021             |
| • Outstanding Graduates of Dept. Automation                    | 2020             |
| • National Encouragement Scholarship*3                         | 2017, 2018, 2019 |
| • The Top Scorer of Science in Wuwei City                      | 2016             |

## TECHNICAL STRENGTHS

<b>Computer Languages</b>	C/C++, Python, MATLAB
<b>Deep Learning Framework</b>	Pytorch, Tensorflow, Keras

## OTHERS

<b>Reviewer Service</b>	IEEE Transactions on ITS, IEEE Transactions on IV, ITSC 2022/2023, CAC 2022/2023 ACTA AUTOMATICA SINICA, IEEE Antennas and Wireless Propagation Letters, et al.
<b>Teaching Assistant</b>	Convex Optimization (2020-2021; 2021-2022)
<b>Blue Book</b>	Annual Report On The Development Of Autonomous Driving Industry In China (2020)