Zhangcun YAN

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🐙 https://github.com/zhangcun-yan

🏠 https://yanzhangcun.github.io/   (homepage)

Education

2019.9 – recent	**Ph.D. Candidate, Tongji University,** Transportation engineering. Thesis title: *Shared spaces mixed traffic flow trajectory reconstruction and modeling based on the driving behavior constraints.*
2023.9–2023.10	**McGill university**, English Language and Culture, *Student*.
2023.1 – 2024.1	**Visiting student, University of Montreal (*Canada*),** Transportation engineering. Research topic: *Mechanistic modeling of motorized and non-motorized interaction behavior based on causal inference.*
2015.9 – 2018.6	**M.S., Southwest Jiaotong University,** Transportation engineering. Thesis title: *Analysis of factors affecting traffic accident severity based on heteroskedasticity ordinal logit - A case study of fixed object accidents.*
2011.9 – 2015.6	**B.S., Ningbo University of Technology,** Transportation . Thesis title: *Optimized design of signal intersections considering pedestrian violations in the VISSIM simulation environment.*

Employment History

2018.7 — 2019.7	**Traffic Engineer,** Shenzhen urban transportation planning center.

Research Interests

Trajectory data analysis and computer vision

- Shared space mixed traffic flow trajectory recognition and tracking based on computer vision.
- High-resolution trajectory reconstruction of mixed traffic flow in shared space.
- Driving behavior modeling and trajectory prediction for mixed traffic flows.

Traffic behavior and safety analysis

- Travel behavior modeling and analysis.
- Analyzing accident data.

Research Publications

Publications journal papers

- **Zhangcun Yan**, Lishengsa Yue, Jian Sun. "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*, (2023),233,120753. doi = 10.1016/j.eswa.2023.120753.

- **Zhangcun Yan**, Duo Zhang, Xiaozhao Lu, Qiyuan Liu, Yinhai Wang, Jian Sun. "Saturation Flow Rate at the Work-Zone-Straddled Intersections with Interweaving Movements: A Lane-Based Modeling Study", *Journal of Transportation Engineering, Part A: systems*, (2022),148(10),04022088-1-15. doi = 10.1061/JTEPBS.0000718.

- Ji Hu, **Zhangcun Yan**, Xiaozhao Lu, Peng Wang, Minjie Zhang, Wanxin Hu. "Analysis of Factors Affecting Traffic Accident Severity Based on Ordinal Logistic Model: A Case Study of Rollover Accidents", *Journal of Chongqing Jiaotong University (natural science) (In Chinese)*, (2017),37,28-34. doi = `10.3969/j.issn.1674-0696.2018.04.13`.

- Ji Hu, **Zhangcun Yan** , Xiaozhao Lu, Wanxin Hu, Minjie Zhang."Analysis for the influential factors of the accident severity based on the ordinal Logit and Probit models", *Journal of Safety and Environment(In Chinese)*, (2018), 18(1009-6094),16-23. doi = `10.13637/j.issn.1009-6094.2018.03.003`.

- Peng WANG, **Zhangcun Yan**, Xiaozhao Lu, Minjie Zhang."Analysis on influencing Factors of Rear-end Crash Severity Based on Ordered Probit Model", *Journal of Safety and Environment (In Chinese)*, (2018), 35(4), 39-45. doi = `10.3969/j.issn.1002-0268.2018.04.013`.

- Xiaonan Dong, **Zhangcun Yan**, Huaiming Zhao, Ji Hu. "Analysis on Travel Mode Choice Behavior Based on Spatial-temporal Constraint", *Journal of Highway and Transportation Research and Development (In Chinese)*, (2020), 37(9),104-112. doi = `10.3969/j.issn.1002-0268.2020.09.014`.

Conference papers

- **Zhangcun Yan**, Lishengsa Yue, Nicolas Saunier, Jian Sun. "Investigating and Modeling Motorized and Non-Motorized Interaction Behavior in Shared Spaces of Intersections", **Transportation Research Board**,(2024), TRBAM-24-06090.

- **Zhangcun Yan**, Qiyuan Liu, Guopeng Zhang, Yinhai Wang, Jian Sun. "Investigating the saturation flow rate of approach lanes at "X" shaped working zone of the signalized intersection", **Transportation Research Board**, (2022), TRBAM-22-04557.

- Duo Zhang, **Zhangcun Yan**, Junhua Wang, Yinhai Wang, Jian Sun. "Impacts of Driver Characteristics on Fuel Consumption Based on Naturalistic Driving Experiment", **Proceedings of the 21th COTA International Conference of Transportation Professionals**, (2022). `doi=10.1061/9780784484265.119`.

- Jiewen Xiao, Ji Hu, **Zhangcun Yan**, Weixin Chen, Gang Wang."Analysis of the Psychological Causes of Drivers' Cell-Phone-Use Behavior Based on Bayesian-SEM Model", **Proceedings of the 20th COTA International Conference of Transportation Professionals**, (2020). `doi=10.1061/9780784483053.404`.

- **Zhangcun, Yan**, Xiaozhao Lu, Wanxin Hu. "Analysis of Factors Affecting Traffic Accident Severity Based on Heteroskedasticity Ordinal Logit", **Proceedings of the 6th International Conference on Transportation Engineering**, (2019). doi = `10.1061/9780784482742.048`.

Skills

Languages	◪	Strong reading, writing, and speaking conversations in Mandarin Chinese, and English.
Coding	◪	Matlab, R, Python.
Traffic Software	◪	VISSIM, TESS NG, Geroge, Arcgis.
Statistical tools	◪	SAS, Stata, SPSS.
Computer vision	◪	OpenCV, Yolov3/4/5/7.

Projects

2023-2024	◪	**Visiting program at University of Montreal**, supported by China Scholarship Council.

Services

2023-now　　　▍Reviewer for **IEEE Transactions on Intelligent Transportation Systems**.

2022-now　　　▍Reviewer for **Journal of Transportation engineering**

Awards Experience

Awards and Achievements

2013　　　▍**National Application for Inspirational Scholarship**, Ningbo University of Technology.

2017　　　▍**Outstanding graduate students**, Southwest Jiaotong University.

　　　　　▍**First class scholarship**, Southwest Jiaotong University.

Certification

2019　　　▍**Third Prize in National Mathematical Modelling**. Awarded by the Chinese Society of Industrial and Applied Mathematics Insitute.

2017　　　▍ **Huangshan Education Bursary**, Awarded by Southwest Jiaotong University.