

# 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.
- 2023.1 – 2024.1    📌 **Visiting student, University of Montréal(Canada)**, Transportation engineering.  
Research topic: *Modeling machine non-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,(*main directions*)

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

### Traffic Behavior and Safety Analysis,(*other directions*)

- 📌 Travel behavior model and analysis.
- 📌 Analysis of factors affecting traffic crash severity.

## Research Publications

### Journal Articles

- 1    **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*, 120753. 🔗 doi:10.1016/j.eswa.2023.120753
- 2    **Zhangcun,YAN, Duo, Z., Xiaozhao, L., Qiyan, L., Yin Hai, W., & Jian, S.** (2022b). Saturation flow rate at the work-zone-straddled intersections with interweaving movements: A lane-based modeling study. *Journal of Transportation Engineering, Part A:systems*. 🔗 doi:10.1061/JTEPBS.0000718

- 3 Qicai, L., LI, H., Xiaolin, S., & **Zhangcun,YAN\***. (2021). Autonomous driving choice behavior based on panel data mixed logit model. *Journal of Chongqing Jiaotong University (natural science) (In chinese)*, 40, 46–52. [doi:10.3969/j.issn.1674-0696.2021.07.07](#)
- 4 Jiewen, X., HU, J., **Zhangcun,YAN**, Weixin, C., & Gang, W. (2020b). Analysis on the psychological cause of using mobile phones during driving based on bayesian-sem. *Journal of Transportation Engineering and Information*, 18, 145–152. [doi:10.3969/j.issn.1672-4747.2020.04.018](#)
- 5 Xiaonan, D., **Zhangcun,YAN**, Huaiming, Z., & HU, J. (2020). Analysis on travel mode choice behavior based on spatial-temporal constraint. *Journal of Highway and Transportation Research and Development (In Chinese)*, 37, 104–112. [doi:10.3969/j.issn.1002-0268.2020.09.014](#)
- 6 HU, J., **Zhangcun, YAN** and Xiaozhao, L., & Wanxin, H. (2018). Analysis for the influential factors of the accident severity based on the ordinal Logit and Probit models[J]. *Journal of Safety and Environment(In Chinese)*, 18, 16–23. [doi:10.13637/j.issn.1009-6094.2018.03.003](#)
- 7 WANG, P., **Zhangcun,YAN**, Xiaozhao, L., & Minjie, Z. (2018). Analysis on influencing factors of rear-end crash severity based on ordered probit model. *Journal of Highway and Transportation Research and Development (In Chinese)*, 35, 39–45. [doi:10.3969/j.issn.1002-0268.2018.04.013](#)
- 8 HU, J., **Zhangcun, YAN**, Xiaozhao, L., WANG, P., Minjie, Z., & Wanxin, H. (2017). 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)*, 37, 28–34. [doi:10.3969/j.issn.1674-0696.2018.04.13](#)

## Conference Proceedings

- 1 **Zhangcun, YAN**, Lishengsa, Y., Nicholas, S., & Jian, S. (2024). Investigating and modeling motorized and non-motorized interaction behavior in shared spaces of intersections. In *Transportation research board (TRBAM-24-06090)*. Washington.DC, USA.
- 2 **Zhangcun, YAN**, Qiyuan, L., Guopeng, Z., Yin Hai, W., & Jian, S. (2022a). Investigating the saturation flow rate of approach lanes at “x” shaped working zone of the signalized intersection. In *Transportation research board (TRBAM-22-04557)*. Washington.DC, USA.
- 3 Jiewen, X., HU, J., **Zhangcun,YAN**, Weixin, C., & Gang, W. (2020a). Analysis of the psychological causes of drivers’ cell-phone-use behavior based on bayesian-sem model. In *Proceedings of the 20th cota international conference of transportation professionals*. [doi:10.1061/9780784483053.404](#)
- 4 **Zhangcun, YAN**, Xiaozhao, L., & Wanxin, H. (2019). Analysis of factors affecting traffic accident severity based on heteroskedasticity ordinal logit. In *Proceedings of the 6th international conference on transportation engineering*. [doi:10.1061/9780784482742.048](#)

## Skills

Languages	■ Strong reading, writing and speaking competencies for Mandarin Chinese,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




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- 2023-now     **Reviewer for IEEE Trans ITS.**
- 2022-now     **Reviewer for Journal of Transportation engineering**



## Awards Experience

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### 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.