

Pengfei Cui

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 [ResearchGate](#) |  [Google Scholar](#) |  [GitHub](#)

College of Metropolitan Transportation, Beijing University of Technology

EXPERIENCE

Beijing University of Technology

Lecturer, College of Metropolitan Transportation

Jul. 2025 – Present

Beijing, China

University of Central Florida

Visiting Scholar, Smart & Safe Transportation Lab (SST Lab)

Nov. 2023 – Nov. 2024

Orlando, FL, USA

◦ Advised by Prof. Mohamed Abdel-Aty (Editor Emeritus of *Accident Analysis & Prevention*)

EDUCATION

Beijing Jiaotong University

Ph.D. in Systems Science

Sept. 2021 – Jun. 2025

Beijing, China

◦ Advisor: Prof. Xiaobao Yang

◦ Dissertation: Research on Key Technologies of Urban Road Traffic System Risk Evolution and Spatial-temporal Network Modeling

Beijing Jiaotong University

M.S. in Transportation Planning and Management (Successive M.S.-Ph.D. Program)

Sept. 2019 – Jun. 2021

Beijing, China

◦ Advisor: Prof. Lu Ma

Dalian Maritime University

B.S. in Traffic Management

Sept. 2015 – Jun. 2019

Dalian, China

RESEARCH INTERESTS

Research Areas: Urban traffic system risk evolution; Spatiotemporal network modeling; Accident causation analysis; Visual semantic analysis.

Methodology: Machine learning & deep learning; Spatial statistics; Econometric models; Computer vision.

Working Topics: Macro-level traffic safety modeling integrating street-view semantic visual features; Spatial inequity analysis in traffic injury rates; Crash frequency and severity modeling with heterogeneity.

HONORS & AWARDS

ESI Highly Cited Paper (Top 1%): 2 papers in *AAP*

2024–2025

Outstanding Graduate Student, Beijing Jiaotong University

2025

China Scholarship Council (CSC) Award, for visiting research at UCF

2023–2024

First-Class Academic Scholarship, Beijing Jiaotong University

2020–2024

Outstanding Olympic Games Intern, Beijing 2022 Winter Olympics

2022

PUBLICATIONS

- [J.10] Yuan, Y., Yang, X., Li, S., Cui, P., Yuan, M. (2026). Effects of autonomous vehicles on intercity public transport within urban agglomerations: Exploring multi-layered heterogeneity and distance-based variations. *Technological Forecasting & Social Change*, 224, 124507. [\[DOI\]](#)
- [J.09] Cui, P., Abdel-Aty, M., Han, L., Yang, X. (2025). Multiscale geographical random forest: A novel spatial ML approach for traffic safety modeling integrating street-view semantic visual features. *Transportation Research Part C: Emerging Technologies*, 179, 105299. [\[DOI\]](#)
- [J.08] Cui, P., Abdel-Aty, M., Yang, X., Wang, C., Yuan, Y. (2025). Quantifying spatial inequities in traffic injury rates through the integration of urban road network measures and social vulnerability. *Accident Analysis & Prevention*,

211, 107916. [\[DOI\]](#)

- [J.07] **Cui, P.**, Abdel-Aty, M., Wang, C., Yang, X., Song, D. (2025). Examining the impact of spatial inequality in socio-demographic and commute patterns on traffic crash rates: Insights from interpretable machine learning and spatial statistical models. *Transport Policy*, 167, 222–245. [\[DOI\]](#)
- [J.06] Wang, C., **Cui, P.***, Abdel-Aty, M., Easa, S.M. (2025). Spatiotemporal disparities in macro-microscopic properties of motorcycle injury level. *Transportmetrica A: Transport Science*. [\[DOI\]](#)
- [J.05] Yuan, Y., Yang, X., Song, D., Yue, X., **Cui, P.** (2025). Bivariate joint analysis of intercity travelers' adaptive behaviors during adverse weather events. *Transportation Research Part A: Policy and Practice*, 195, 104462. [\[DOI\]](#)
- [J.04] Wang, C., Abdel-Aty, M., **Cui, P.***, Han, L. (2024). Effects of helmet usage on moped riders' injury severity in moped-vehicle crashes: Insights from partially temporal constrained random parameters bivariate probit models. *Accident Analysis & Prevention*, 208, 107800. [\[DOI\]](#)
- [J.03] **Cui, P.**, Yang, X., Abdel-Aty, M., Zhang, J., Yan, X. (2024). Advancing urban traffic accident forecasting through sparse spatio-temporal dynamic learning. *Accident Analysis & Prevention*, 200, 107564. [\[DOI\]](#)
- [J.02] **Cui, P.**, Yang, X., Ma, L., Mu, C. (2023). Modeling non-parametric effects of two-vehicle speed on crash risk at intersections: Leveraging two-dimensional additive logistic regression beyond univariable approach. *Journal of Transportation Safety & Security*, 16(7), 746–767. [\[DOI\]](#)
- [J.01] Song, D., Yang, X., Yang, Y., **Cui, P.**, Zhu, G. (2023). Bivariate joint analysis of injury severity of drivers in truck-car crashes accommodating multilayer unobserved heterogeneity. *Accident Analysis & Prevention*, 190, 107175. [\[DOI\]](#)

ACADEMIC SERVICES

Journal Reviewer: *Nature Communications* (JCR Q1); *Transportation Research Part C: Emerging Technologies* (JCR Q1); *Accident Analysis & Prevention* (JCR Q1); *Transport Policy* (JCR Q1).

SKILLS

Programming: Python, R, STATA, LaTeX

Software & Tools: ArcGIS Pro, QGIS, VS Code, RStudio, Zotero, Overleaf

Languages: Chinese (Native), English (Fluent)

REFERENCES

1. Prof. Xiaobao Yang (Ph.D. Advisor)

Professor, School of System Science, Beijing Jiaotong University

Email: yangxb@bjtu.edu.cn

2. Prof. Lu Ma (M.S. Advisor)

Professor, School of Traffic and Transportation, Beijing Jiaotong University

Email: malu@bjtu.edu.cn

3. Prof. Mohamed Abdel-Aty (Visiting Advisor)

Pegasus Professor, Trustee Endowed Chair, Department of CECE, University of Central Florida

Director of Smart & Safe Transportation Lab; Editor Emeritus of *Accident Analysis & Prevention*

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