

TAO TAO

130 Humphrey School, 301 19th Avenue South, Minneapolis MN 55455

taotao@umn.edu ◊ Personal Website

EDUCATION

University of Minnesota Twin Cities

Ph.D. candidate in Urban and Regional Planning
Humphrey School of Public Affairs

August 2017 - Present

University of Minnesota Twin Cities

M.S. candidate in Statistics
School of Statistics

August 2019 - Present

Southeast University, Nanjing, China

M.E. in Transportation Planning and Management
School of Transportation

August 2013 - June 2017

Southeast University, Nanjing, China

B.E. in Traffic and Transportation
School of Transportation

August 2008 - June 2012

PROFESSIONAL APPOINTMENT

Graduate research assistant at University of Minnesota

Fall 2017 - Present

Graduate instructor at University of Minnesota

Fall 2019, Spring 2021, Spring 2022

Planning intern at Minnesota Department of Transportation

Summer 2019

HONORS AND AWARDS

Doctoral Dissertation Fellowship, University of Minnesota

2021

Summer Fellowship, Humphrey School of Public Affairs

2021

John S. Adams Award for Excellence in Transportation Research and Education, Center for Transportation Studies

2021

TRB Annual Meeting Travel Award, Center for Transportation Studies

2018, 2019, 2020

IACP Annual Meeting Travel Award, International Association for China Planning

2018

Jiangsu Daqin Alumni Fellowship, Southeast University

2015

China Road and Bridge Corporation Alumni Fellowship, Southeast University

2011

JOURNAL ARTICLES

1. **Tao, T.**, Cao, J., 2021. Exploring the interaction effect of poverty concentration and transit service on highway traffic during the COVID-19 lockdown. *Journal of Transport and Land Use*. [Accepted]
2. **Tao, T.**, Cao, J., Wu, X., 2021. The road less traveled: Does rail transit matter? *Journal of Planning Education and Research*. [Link]
3. **Tao, T.**, Wu, X., Cao, J., Fan, Y., Das, K., Ramaswami, A., 2020. Exploring the non-linear relationship between the built environment and active travel in the Twin Cities. *Journal of Planning Education and Research*. [Link]
4. **Tao, T.**, Wang, J., Cao, X., 2020. Exploring the non-linear associations between spatial attributes and walking distance to transit. *Journal of Transport Geography* 82, 102560. [Link][Code]

5. Wu, X., **Tao, T.**, Cao, J., Fan, Y., Ramaswami, A., 2019. Examining threshold effects of built environment elements on travel-related carbon-dioxide emissions. *Transportation Research Part D: Transport and Environment* 75, 1–12. [Link]
6. Dou, X., Gong, X., Guo, X., **Tao, T.**, 2017. Coordination of feeder bus schedule with train service at integrated transport hubs. *Transportation Research Record: Journal of the Transportation Research Board* 2648, 103–110. [Link]
7. Hu, J., Guo, X., **Tao, T.**, Hu, T., 2017. Optimization of LRT network using on k-shortest path algorithm. *Journal of Southeast University* 6, 1274-1278. [In Chinese][Link]

RESEARCH REPORTS

1. Webb, A., Khani, A., **Tao, T.**, Cao, J., Wu, X., 2021. Impact of transitways on travel on parallel and adjacent roads and park-and-ride facilities. [Link]
2. Lindsey, G., **Tao, T.**, Wang, J., Cao, J., 2019. Pedestrian and bicycle crash risk and equity: implications for street improvement projects. [Link]
3. Tomhave, B., Zhang, Y., Khani, A., Hourdos, J., Dirks, P., Olsson, J., **Tao, T.**, Wu, X., Cao, J., 2018. After study of the bus rapid transit A Line impacts. Center for Transportation Studies, University of Minnesota. [Link]

ARTICLES UNDER REVIEW

1. **Tao, T.**, Lindsey, G., Cao, J., Wang, J., 2021. The effects of pedestrian and bicycle exposure on crash risk in Minneapolis. [3rd-round]
2. **Tao, T.**, Cao, J., 2021. Collective influences of regional and local built environment characteristics on mode-specific distances. [1st-round]
3. **Tao, T.**, Cao, J., 2021. Examining motivations for owning autonomous vehicles: Implications for land use and transportation. [1st-round]

WORKING PAPERS

1. Exploring the nonlinear and threshold effects of the built environment on driving behavior with a mixed-method approach.
2. Exploring the pedestrian and bicycle crash risk in highway intersections: systemic approach applied in Twin Cities.
3. How does built environment affect activity space of people living in different income level areas?

RESEARCH EXPERIENCE

1. Mobile-device data, non-motorized traffic monitoring, and estimation of annual average daily bicyclist and pedestrian flows [RSI] 2021
2. Connecting the smart-city paradigm with a sustainable urban infrastructure systems framework to advance equity in communities [NSF] 2020
3. Impact of transitways on travel on parallel and adjacent roads and park-and-ride facilities [Mn-DOT] 2019-2020
4. Exploring the pedestrian and bicycle crash risk in highway intersections: systemic approach applied in the Twin Cities metro area [MnDOT] 2019
5. Pedestrian and bicycle crash risk and equity: implications for street improvement projects [Mn-DOT] 2018

6. Integrated urban infrastructure solutions for environmentally sustainable, healthy and livable cities [NSF] 2018
7. After study of the bus rapid transit A Line impacts [MnDOT] 2017

TEACHING EXPERIENCE

Independent instructor

1. PA 5234 Urban transportation planning and policy Spring 2021
2. PA 5928 Data management and visualization with R Fall 2019, Spring 2021, Spring 2022

Guest speaker

1. PA 5231 Transit planning and management Fall 2020
2. PA 5205 Statistics for planning Spring 2020
3. PA 5234 Urban transportation planning and policy Spring 2020
4. PA 8202 Networks and places: transportation, land use, design Spring 2019

PRESENTATIONS

Podium

1. **Tao, T.**, Cao, J., 2021. Examining the motivations for the willingness to own autonomous vehicles in the Twin Cities. In: *2021 ACSP annual conference*. [Upcoming]
2. **Tao, T.**, Cao, J., 2021. Exploring the heterogeneous nonlinear effects of built environment attributes on driving, transit use, and active travel. In: *2021 IACP annual conference*. [Upcoming]
3. **Tao, T.**, Cao, J., 2021. Examining the motivations for the willingness to own autonomous vehicles in the Twin Cities. In: *2021 IACP annual conference*. [Upcoming]
4. **Tao, T.**, Cao, J., 2021. Exploring the interaction effect of poverty concentration and transit service on highway traffic during the COVID-19 lockdown. In: *2021 WSTLUR annual conference*. [Upcoming]
5. **Tao, T.**, Cao, J., Wu, X., 2020. The road less traveled: Does rail transit matter? In: *2020 ACSP annual conference*.
6. **Tao, T.**, Cao, J., Wu, X., 2020. The road less traveled: Does rail transit matter? In: *Bridging Transportation Researchers (BTR) Conference*, 2020.
7. **Tao, T.**, 2019. How does built environment affect activity space of people living in different income level areas? In: *2019 Annual CTS Transportation Research Conference*.
8. **Tao, T.**, Lindsey, G., Cao, J., Wang, J., 2019. New methods for accessing pedestrian and bicycle exposure to risk, crash risk, and equity. In: *2019 ACSP annual conference*.
9. **Tao, T.**, Lindsey, G., Cao, J., Wang, J., 2019. Pedestrian and bicycle crashes in Minneapolis: an equity perspective. In: *2019 Minnesota Transportation Conference*.
10. **Tao, T.**, Lindsey, G., Cao, J., Wang, J., 2018. Methods and measures for assessing pedestrian exposure to risk, crash risk, and equity. In: *2018 Annual CTS Transportation Research Conference*.
11. **Tao, T.**, Cao, J., Das, K., Fan, Y., 2018. Exploring nonlinear influences of built environment characteristics on carbon emissions of daily travel in Minneapolis. In: *2018 ACSP annual conference*.

12. **Tao, T.**, Cao, J., 2018. Exploring built environment correlates of walking distance of transit access in the Twin Cities: A Machine Learning Approach. In: *2018 IACP annual conference*.
13. **Tao, T.**, 2017. Analysis of operating patterns of the public bicycling sharing system in the Twin Cities. In: *2017 Sharing Economy Research Forum*.

Poster

1. **Tao, T.**, 2020. Exploring the pedestrian and bicycle crash risk in highway intersections: systemic approach applied in the Twin Cities metro area. In: *Annual Meeting of the Transportation Research Board*, 2020.
2. Lindsey, G., **Tao, T.**, Wang, J., Cao, J., 2020. Exposure, crash risk, and equity: models of pedestrian and bicycle crashes in Minneapolis. In: *Annual Meeting of the Transportation Research Board*, 2020.
3. **Tao, T.**, Cao, J., Das, K., Fan, Y., 2019. Exploring the non-linear relationship between built environment characteristics and people's active travel. In: *Annual Meeting of the Transportation Research Board*, 2019.
4. **Tao, T.**, Guo, X., Li, J., Huang, Y., 2017. Operating characteristics of a public bicycle sharing system based on the status of stations: a case study in Nanning City, China [C]. In: *Proceedings of the 97th Annual Meeting of the Transportation Research Board*, 2017.
5. Wang, W., **Tao, T.**, Tai, J., Yang, J., 2017. Path to success: investment and public opinions are reforming the taxi industry in China [C]. In: *Proceedings of the 97th Annual Meeting of the Transportation Research Board*, 2017.

Invited talk

1. Threshold effects of urban form on travel and associated carbon emissions. By: *Climate Change AI*, 2021.
2. Exploring the Nonlinear Relationship between the Built Environment and Active Travel in the Twin Cities. By: *Southeast University*, 2021.
3. Non-linear and threshold effects in land use and transportation research. By: *Beijing Jiaotong University*, 2020.
4. The road less traveled: Does rail transit matter? By: *Peking University*, 2020.

PROFESSIONAL ORGANIZATIONS

- ACSP student member
- IACP student member
- Friend: TRB Standing Committee on Economic Development and Land Use, Standing Committee on Bicycle Transportation, Standing Committee on Traveler Behavior and Values

PROFESSIONAL SERVICE

Journal Referee

- Transportation Research Part D
- Journal of Transport and Geography
- Transportation
- Journal of Public Transportation

- Urban Studies
- Journal of Transport and Land Use
- Sustainable Cities and Society
- Energy for Sustainable Development

Conference Referee

- COTA International Conference of Transportation Professionals
- World Symposium on Transport and Land Use Research
- Bridging Transportation Researchers Conference