

Yefu Chen

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Education

- 09/2019 – Present**
(anticipated 05/2024) **Ph.D. candidate, Community and Regional Planning Ph.D. Program,**
University of Texas at Austin, TX
Dissertation topic: Evaluating the trade-off and the impact of public transit services on affordability: what are the roles of public transit services on location affordability
Dissertation committee: Dr. Junfeng Jiao (chair), Dr. Ming Zhang, Dr. Jacob Wegmann, Dr. Arya Farahi, and Dr. Sergio Castellanos
- 09/2016 - 06/2018** **Master of Urban Planning and Design, University of Washington, WA**
Thesis topic: The impact of peer-to-peer ridesharing on travel mode: an empirical study of Uber's effects on Travel Mode in Seattle
Dissertation committee: Dr. Qing Shen (chair) and Dr. Marina Alberti
- 09/2012 - 06/2016** **Bachelor of Science, Sun Yat-sen University, China**
Thesis topic: The influence of built environment on the satisfaction of elderly people's living in the context of aging

Areas of Specialization

1. Just and Inclusive Urban Systems
2. Real Estate Market
3. Disparities in Affordability and Equity
4. Interpretable and Ethical Machine Learning and Data Science

Publications

Refereed Journal Articles

1. Jiao, J., Wu, X.*, **Chen, Y.**, Farahi, A. (2023). How the single-family residence housing market capitalizes green property upgraded features: evidence from city of Austin. *International Journal of Housing Markets and Analysis*. <https://doi.org/10.1108/IJHMA-07-2023-0095>
2. **Chen, Y.**, Jiao, J*., Farahi, A. (2023). Disparities in factors affecting housing price: a machine learning approach to the effects of housing status, public transit, and density factors on single-families housing price. *Cities*. <https://doi.org/10.1016/j.cities.2023.104432>
3. **Chen, Y.**, Xi, H., Jiao, J*. (2023). What Are the Relationships between Public Transit and Gentrification Progress? An Empirical Study in the New York–Northern New Jersey–Long Island Areas. *Land*. 12(2). <https://doi.org/10.3390/land12020358>
4. Bissiri, A., Jiao, J.*, & **Chen, Y.** (2022). A scoping review of the benefits of face mask use on pedestrian and bicyclist exposure to air pollutants. *Journal of Transport & Health*, 26, 101484. <https://doi.org/10.1016/j.jth.2022.101484>
5. **Chen, Y.**, & Jiao, J.* (2022). Are There Transit Deserts in Europe? A Study Focusing on Four European Cases through Publicly Available Data. *Sustainability*. 14(20), Article 20. <https://doi.org/10.3390/su142013182>
6. Jiao, J., & **Chen, Y***. (2022). Is the relationship between bus and light rail transit a competition substitution or a congestion substitution? An empirical study in Seattle. *Public Transport*. <https://doi.org/10.1007/s12469-022-00294-4>
7. Jiao, J., **Chen, Y***, & Azimian, A. (2021). Exploring temporal varying demographic and economic disparities in COVID-19 infections in four U.S. areas: based on OLS, GWR, and random forest

- models. *Computational Urban Science*. 1, 27. 2021. <https://doi.org/10.1007/s43762-021-00028-5>
8. Bai, S., Jiao, J., **Chen, Y.**, Guo, J. (2021). The relationship between E-scooter travels and daily leisure activities in Austin, Texas. *Transportation Research Part D: Transport and Environment*. 95. 2021. <https://doi.org/10.1016/j.trd.2021.102844>
 9. Bai, S., Jiao, J., **Chen, Y.** (2021). Mapping the Intercounty Transmission Risk of COVID-19 In New York State Via Historical Commute Data. *Transportation Research Record*. 2021. <http://worldcat.org/issn/03611981>
 10. Chen F., **Chen Y.** (2020). Urban climate research and planning applications in China: a scientometric and long-term review (1963-2018) based on CiteSpace. *Climate Research*. 81:91-112. 2020. <https://doi.org/10.3354/cr01611>

Selected manuscripts in Preparation

1. **Yefu Chen**, Junfeng Jiao*, Arya Farahi, Xiaohan Wu. (Preparing for the *Housing Studies*). Assessing the nonlinearity and disparities in impacts of accessibility factors on residential property values during the pandemic through Bayesian modeling: The case of the Austin, Texas, 2018–2021
2. **Yefu Chen**, Junfeng Jiao*. (Preparing for the *Environment and Planning B journal*). Where is the model performing badly? Explore the performance of machine learning approaches in predicting particular matter 2.5 concentrations in Los Angeles County
3. Junfeng Jiao, Evan Ruby, **Yefu Chen***, Rank Makarem. (Preparing for the *Transportation Research D*). Explore transit potential based on transit deserts and street design characters in U.S. Cities.
4. Junfeng Jiao, Devrim Ikizler, **Yefu Chen***, Naomi Nelson, Kirsten Dalquist, Heather Bishop. (Prepared for the *Transportation Policy*). Incorporating equity and technologies in solving mobility issues of vulnerable populations: A case study of the Community Hub for Smart Mobility (CHSM) in Austin, Texas
5. Junfeng Jiao, Xiaohan Wu*, **Yefu Chen**, Arya Farahi. (Forth revisions, *Cities*). Comparing the Impacts of COVID-19 on Residential Rental Market Across Rental Sectors: Evidence from City of Austin
6. **Yefu Chen**, Junfeng Jiao*, Ryan Zheng. (Submitted to *Travel Behavior and Society*). Exploring the Changes in Trip Generation and Impacts of Built Environment Factors between Regular Trips and Essential Trips based on Big Data and Open-access Data: A study based on the contiguous United States
7. **Yefu Chen**, Junfeng Jiao*. (Submitted to *Transportation Letters*). Investigating the relationship between trip purposes, perceptions, and frequency of ride-sourcing trips: An empirical study in four major Texas metropolitans

Project Technical Reports

1. Moudon, A., Shi, X., **Chen, Y.** (2020). Washington State School Walk Score. <https://digital.lib.washington.edu/researchworks/handle/1773/45599>
2. Jiao, J., Bischak, C., **Chen, Y.**, Guerra, E., Pan, Q. (2019). The Role of Transportation Networking Companies in Megaregion Mobility. 2019. <https://rosap.ntl.bts.gov/view/dot/54419>

Teaching

Teaching Assistant
2023 Fall

University of Texas at Austin

CRP 395D: *Smart City Practicum*, Master of Science in Community and Regional Planning. Instructor: Junfeng Jiao

This graduate-level course explored knowledge of smart city technologies and introduced Python programming to the students. I took the initiative in drafting the guest speakers list and extending invitations to these experts for their

valuable insights. Additionally, I curated the Python tutorial, organized in-class exercises, and designed homework assignments to ensure a comprehensive learning experience.

2023 Spring

CRP 395D: Smart City Practicum, Master of Science in Community and Regional Planning. Instructor: Junfeng Jiao

2021 Spring

CRP 386: Urban Geographic Information System, Students from Interdisciplinary Programs. Instructor: Junfeng Jiao

This graduate-level course introduced students to the essential integration of GIS into their research and professional endeavors. I curated and delivered tutorial content for students and conducted multiple lectures covering fundamental GIS concepts and their practical applications.

2020 Fall

LA 329: Global Learning Seminar, Undergraduate Students from Interdisciplinary Programs. Introduction: Junfeng Jiao and Junko Hatanaka

This course is designed for five undergraduate students who won the UT President's Award for Global Learning. I assisted the instructors in preparing materials for teaching Japanese, overviewing Japanese culture, and introducing research methods. I gave lectures about Autonomous Vehicles development and Japan's culture and history.

2020 Spring

CRP 386 Urban Geographic Information System, Students from Interdisciplinary Programs. Instructor: Junfeng Jiao

2019 Fall

CRP 685D: Planning Studio - Urban Renewal for Tokyo Water Bus System, Master of Science in Community and Regional Planning. Instructor: Junfeng Jiao

The primary objective of this studio was to enhance the utilization of Tokyo's water bus systems through various means, including physical planning, infrastructure development, land use renewal, neighborhood revitalization, and tourism promotion. I collaborated with the instructor to design the trip, organized activities, worked with students about the design, and conducted reviews of the project deliverables.

Course Assistant

University of Texas at Austin

2022 Fall

CS 395T: Machine Learning and its Applications, Master of Interdisciplinary Program. Instructor: Junfeng Jiao

This course introduced the field of machine learning, including presentations of its main approaches and an overview of new challenges. My responsibilities included material preparation, including the creation of PowerPoint presentations and the formatting of training data. I used this material to deliver two lectures focusing on the application of machine learning in housing analysis and public health analysis.

Funded Projects

Leading Research Assistant

Co-Creating a Community Hub for Smart Mobility: A University-Government-Nonprofit Partnership.
Standard Grant, National Science Foundation,
\$985,401 (PI: Junfeng Jiao).
2022.

This project's primary objective was to create, execute, and assess a Community Hub for Smart Mobility (CHSM) to combat job/housing misalignment in U.S. cities. The project encompasses five core thrusts: collaborative design with local agencies, shared development of facilities, cooperation with civic partners for facility operations, evaluation of the hub's effects, and the expansion and dissemination of the CHSM concept through the City of Austin's Project Connect. The research outcomes contributed significantly to the fields of transportation, community

planning, and participatory design, presenting a viable model for community-based mobility solutions aimed at mitigating the job/housing mismatch.

Convergent, Responsible, and Ethical Artificial Intelligence Training Experience for Roboticists. Continuing Grant, National Science Foundation, \$29,999 (PI: Junfeng Jiao). **2021.**

This grant is designed to meet the growing need for comprehensive STEM graduate education that prepares upcoming experts to navigate the realm of AI and robotics technology ethically. The specific objectives I worked on were to harness AI for addressing urban challenges, with a focus on evaluating disparities and variations in technology's impact on housing values across diverse neighborhoods. The findings indicate that economic disparities may exert a more significant influence than factors related to race or ethnicity.

The Role of Transportation Networking Companies in Megaregion Mobility. Research Grant, Cooperative Mobility for Competitive Megaregions at the University of Texas at Austin, \$20,000 (PI: Junfeng Jiao). **2019.**

This project delved into user attitudes and distinctions between heavy and light users of Transportation Network Companies (TNC) services. It was grounded in a comprehensive survey of TNC users within the Texas Triangle Megaregion. The results reveal that users who prioritize convenience tend to use TNCs infrequently, whereas frequent users typically employ these services for commuting purposes. Furthermore, these frequent users often exhibit higher income levels and educational attainment.

Working Experience

Research Assistant

2021 Fall – 2022 Fall

The University of Texas at Austin. Supervisor: Dr. Junfeng Jiao

2018 Fall – 2019

The University of Washington. Supervisor: Dr. Anne Moudon

Spring

I assisted in a project that developed the walking index for Kindergarten through Junior High School (K-8) schools in Washington State. I utilized data from the 2016 Washington State Student Travel Survey in conjunction with built environment data to validate factors previously identified in the literature as influencing children's walking habits to and from school. Additionally, I was involved in estimating walkability scores for K-8 schools in Washington State under various data availability scenarios.

Internship

2017 Summer

City of Issaquah, Washington. Supervisor: Emily Adams

I collaborated with local agencies to formulate a comprehensive housing strategy work plan. My role involved gathering, organizing, and forecasting demographic and housing data to assess housing demand. The outcomes of this effort were subsequently integrated into actionable housing initiatives.

2015 Fall - 2016

Guangzhou Planning Institute. Supervisor: Liang Tian

Spring

I worked with urban planners to develop a framework for the urban open space density index. This framework was built upon the existing index system to construct a suitable urban open space density index system. The outcomes and framework were subsequently applied in the formulation of the 2019 Guangzhou Ecological Belt Master Plan.

2015 Summer

China Academy of Urban Planning and Design. Supervisor: Jie Gao

I conducted an analysis of the economic interplay within the Yangtze Delta region and quantified the spillover effects of high-tech industries in Shanghai. Additionally, I supported the analysis of demographic trends and commuting flows in this area.

Selected Conference Presentations

1. **Yefu Chen**, Junfeng Jiao, Arya Farahi. Nonlinearity in spatial-temporal impacts of light rail transit on single-family family property values: an empirical study in Austin, Texas through Bayesian models, American Association of Geographers, 2023.
2. **Yefu Chen**, Junfeng Jiao, Arya Farahi. Disparities in factors affecting housing price: a machine learning approach to the effects on single families housing transaction prices, Association of Collegiate Schools of Planning 61st Annual Conference, 2022.
3. **Yefu Chen**, Junfeng Jiao. Exploring Demographic and Economic Disparities in COVID-19 Infections in Low-/High-density Areas. Association of Collegiate Schools of Planning 61st Annual Conference, 2021.
4. **Yefu Chen**, Junfeng Jiao, Ming Zhang. Exploring Non-linear Built Environment Effects on Commuting Choices: an empirical study in the Cascadia region. International Association of China Planning. 2021.
5. **Yefu Chen**, Shunhua Bai, Junfeng Jiao. Dockless E-scooter Usage Patterns and Urban Built Environments. Transportation Research Board 99th Annual Meeting. 2020.

Academic Service

- *Conference Member*: International Association for China Planning, Member of Board of Directors (2023-2025)
- *Journal Reviewer*: Transportation Research Record, Journal of Planning Education and Research, BMC Health Service Research, Computational Urban Science, Environmental Management, Urban Planning International, Cities, Journal of Transport and Land Use

Skills

- Statistical Modeling and Data Management: R, Stata, SPSS, Python
- Spatial Analysis: ArcGIS, QGIS, MapInfo
- Visualization: Adobe Creative Cloud, Tableau

Fellowship and Awards

2023	Professional Development Award, University of Texas at Austin
2019/2023	Travel Award, University of Texas at Austin
2019/2020	Graduate Student Fellowship, University of Texas at Austin
2012/2013	Merit Student Scholarship, Sun Yat-sen University