

Hanyong Xu

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RESEARCH INTEREST

- Algorithmic fairness in urban science system
- Travel behavior and behavioral science
- On-demand services in platform economy

EDUCATION

- 2023 - present **Ph.D., Computational Urban Science** Cambridge, MA
Massachusetts Institute of Technology
- Advisor: Jinhua Zhao
 - *Selected Coursework: AI, Decision Making, and Society; Transportation Foundation and Methods; Optimization Methods*
- 2019 - 2020 **Master, Urban Spatial Analysis** Philadelphia, PA
University of Pennsylvania
- Advisor: Ken Steif
 - *Selected Coursework: Spatial Statistics and Data Analysis; Data Wrangling and Visualization*
- 2015 - 2019 **Honors Bachelor of Arts** Toronto, ON
University of Toronto
- with High Distinction
 - Double Major in Economics and Architectural Design

WORKING PAPERS

- [1] **Xu, H.**, Zhao, J. “Navigating Algorithmic Unfairness in Ride-Hailing: Examining Disparate Impacts of Transportation Network Company Algorithms in New York City.”
- [2] He, X., **Xu, H.**, Shen C., Zhuang D., & Zheng Y. “Modeling Latent Demand and Reducing Prediction Disparities of Ride-hailing: A Fair Quantile Regression Method.”
- [3] Guo X., **Xu H.**, Zheng Y., Zhuang D., & Zhao J. “[Disparity-Reducing Vehicle Rebalancing in the Ride-hailing System.](#)”
Submitting to *Transportation Research Part C*
- [4] Gao J., **Xu H.**, Dao L. “[Multi-Generative Agent Collective Decision-Making in Urban Planning: A Case Study for Kendall Square Renovation.](#)”
Submitting to *the 32nd International Conference on Transdisciplinary Engineering 2025*

CONFERENCE PROCEEDINGS

- Jan. 2025 Zhuang D., **Xu H.**, Guo X., Zheng Y., & Zhao J. “Mitigating Spatial Disparity in Urban Prediction Using Residual-Aware Spatiotemporal Graph Neural Networks: A Chicago Case Study.”
105th Transportation Research Board Annual Meeting (TRB, poster presentation)
- Sept. 2024 Mo B., **Xu H.**, Cho J. H., Zhuang D., Ma R., Guo X., & Zhao J. “[Large Language Model for Travel Mode Choice Prediction.](#)” [[extended abstract](#)]
Conference in Emerging Technologies in Transportation Systems (TRC-30, poster presentation)

INVITED TALKS

- Oct. 2024 Navigating Algorithmic Unfairness in Ride-Hailing: Examining Disparate Impacts of Transportation Network Company Algorithms in New York City.
2024 INFORMS Annual Meeting

RESEARCH EXPERIENCE

- 2023 - present Researcher, **JTL Urban Mobility Lab, MIT** Cambridge, MA
2022 Research Assistant, **FUSE Lab, Hong Kong University** Remote

PROFESSIONAL EXPERIENCE

- 2021 - 2023 Data Analyst, Internal Risk Control and Compliance, **Meituan** Beijing, China
2020 - 2021 Data and GIS Analyst, **CityDNA Technology Co.** Beijing, China
2020 Data Science Intern, **AreaProbe** Remote

TEACHING EXPERIENCE

- Fall, 2024 Teaching Assistant, Introduction to Spatial Analysis and GIS, MIT
Fall, 2024 Teaching Assistant, Workshop on GIS, MIT

GRANT

- 2024 Racially Just Research Initiative Microgrant, DUSP MIT
2025 Diversity, Equity, and Inclusion Conference Grant, GSC MIT

HONORS

- 2024 **Design and Technology Fellow**, FASPE
2023 **Presidential Graduate Fellowship**, MIT
2020 **Descartes Award (top 2 in the cohort)**, University of Pennsylvania
2019 **1st Place**, Wharton Customer Analytics + Electronic Arts Datathon
2019 **2nd Prize**, Computational Design and Robotic Fabrication International Competition, DigitalFUTURES, Tongji University

2019 **UofT Women in House**, University of Toronto
2016-2019 **Dean's List Scholar**, University of Toronto

SKILLS

Data Science & Machine Learning: Python + PyTorch, Julia + Gurobi, SQL, R, Excel, Google Cloud Computing

Front End & Visualization: JavaScript + html + css, Vue, Leaflet, Mapbox, Kepler

Geo-Spatial Analysis: ArcGIS, ArcPy, QGIS, Google Earth Engine, GeoDa

Product Design: Figma, Adobe Photoshop, Illustrator, InDesign

Last updated: Jan. 11th, 2025