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., Urban Science** Cambridge, MA
Massachusetts Institute of Technology
- Advisor: Jinhua Zhao
- *Selected Coursework: Optimization Methods; Transportation Foundation & Methods; Demand Modeling*

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. " Longitudinal Evaluations of the Coverage and Pricing Differences between Transportation Network Companies and Traditional Taxis: A Case Study of New York City."

[2] He, X., **Xu, H.**, Shen C., Zhuang D., Zheng Y., & Zhao J. "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."

CONFERENCES, TALKS, & WORKSHOPS

July 2025 Gao J., **Xu H.**, Dao L. "Simulating Multi-Stakeholder Decision-Making with Generative Agents in Urban Planning"
32nd International Conference on Transdisciplinary Engineering (TE2025, oral presentation)

Jan./Apr. 2025 Zhuang D., **Xu H.**, Guo X., Zheng Y., Wang S., & 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), The International Workshop on Spatio-Temoporal Data Mining from the Web (WebsT'25 @ WWW'25, workshop, Best Paper Award) [proceeding]

Oct. 2024 **Xu H.** "Navigating Algorithmic Unfairness in Ride-Hailing: Examining Disparate Impacts of Transportation Network Company Algorithms in New York City."
2024 INFORMS Annual Meeting (invited talk)

Sept. 2024 Mo B., **Xu H.**, Cho J. H., Zhuang D., Ma R., Guo X., & Zhao J. "Large Language Model for Travel Behavior Prediction." [extended abstract]
Conference in Emerging Technologies in Transportation Systems (TRC-30, poster presentation)

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

2024 - 2025 Teaching Assistant, Introduction to Spatial Analysis and GIS, MIT
2024 - 2025 Teaching Assistant, Workshop on GIS, MIT

GRANT

2025 Graduate Student Council Conference Grant, GSC MIT
2024 Racially Just Research Initiative Microgrant, DUSP 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

INSTITUTE SERVICE

2024-2025 **Student Representative**, MIT DUSP PhD Committee

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

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