Hanyong Xu

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RESEARCH INTEREST

- Algorithmic fairness and urban mobility system
- Travel behavior and behavioral science
- Shared mobility in platform economy
- On-demand logistics

EDUCATION

2023 - present **Ph.D., Urban Studies and Planning** Cambridge, MA
Massachusetts Institute of Technology
- Advisor: Jinhua Zhao

2019 - 2020 **Master, Urban Spatial Analysis** Philadelphia, PA
University of Pennsylvania
- Advisor: Ken Steif

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. "Modeling Latent Demand and Prediction Disparity of Ride-hailing: A Fair Quantile Prediction."

[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 *24th International Conference on Autonomous Agents and Multiagent Systems*

CONFERENCE PROCEEDINGS

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) (Scheduled)

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

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

HONORS

2024 **Design and Technology Fellow**, FASPE
2023 **Presidential Graduate Fellowship**, MIT
2020 **Descartes Award (top 2 in 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
2016-2019 **Dean's List Scholar**, University of Toronto

RESEARCH EXPERIENCE

2023 - present Researcher, **JTL Urban Mobility Lab, MIT** Cambridge, MA
2022 Research Assistant, **FUSE Lab, Hong Kong University** Remote
- Project: Building damage estimation during the Russo-Ukrainian War using satellite images.

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

SKILLS

Data Science & Machine Learning Python, Julia, SQL, R, Excel
PyTorch, Google Cloud Computing, Web Scraping

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