

# 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: Optimization Methods; Transportation Foundation & Methods; Demand Modeling (ongoing)*
- 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 32<sup>nd</sup> 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)*

## TALKS & WORKSHOPS

- 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.](#)”  
*The International Workshop on Spatio-Temporal Data Mining from the Web (WebST'25 @ WWW'25, workshop, scheduled)*
- Oct. 2024 Navigating Algorithmic Unfairness in Ride-Hailing: Examining Disparate Impacts of Transportation Network Company Algorithms in New York City.  
*2024 INFORMS Annual Meeting (invited talk)*

## RESEARCH EXPERIENCE

- |                |   |               |
|----------------|---|---------------|
| 2023 - present | Researcher, <b>JTL Urban Mobility Lab, MIT</b>            | Cambridge, MA |
| 2022           | Research Assistant, <b>FUSE Lab, Hong Kong University</b> | Remote        |

## PROFESSIONAL EXPERIENCE

- |             |  |                |
|-------------|--|----------------|
| 2021 - 2023 | Data Analyst, Internal Risk Control and Compliance, <b>Meituan</b> | Beijing, China |
| 2020 - 2021 | Data and GIS Analyst, <b>CityDNA Technology Co.</b>                | Beijing, China |
| 2020        | Data Science Intern, <b>AreaProbe</b>                              | 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 | Graduate Student Council 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

## 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

Last updated: Mar. 20<sup>th</sup>, 2025