Luyu Liu

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Research interests

Sustainable transportation, social equity, mobility analytics, geospatial data science

Education

The Ohio State University, Department of Geography	Columbus, Ohio
Ph.D. Geography	2019 – 2023 (expected)
The Ohio State University, Department of Educational Studies	Columbus, Ohio
Graduate Certificate in College and University Teaching	2020 – 2021
The Ohio State University, Department of Geography	Columbus, Ohio
M.A. Geography	2017 – 2019
Peking University, College of Urban and Environmental Sciences	Beijing, China
B.S. Environmental Science	2013 – 2017
Peking University, School of Mathematical Sciences	Beijing, China
B.S. Mathematics and Applied Mathematics	2014 – 2017

Theses

Ph.D. dissertation

Accessibility in motion: measure real-time accessibility with high-resolution data	2019 – present

The Ohio State University
Supervisory committee: Dr. Harvey Miller, Dr. Ningchuan Xiao, Dr. Huyen Le, and Dr. Andre Carrel

Master's thesis

Public transit transfer risk with high-resolution schedule and real-time bus data	2018 – 2019

The Ohio State University
Supervisory committee: Dr. Harvey Miller, Dr. Ningchuan Xiao, and Dr. Morton O'Kelly

Undergraduate thesis

Measuring and decomposing global CO2 emission inequality	2015 – 2017

Peking University
Supervisory committee: Dr. Bengang Li

Honors and Awards

Presidential Fellowship, The Ohio State University	2022 – 2023
TR Lakshmanan and Lata Chatterjee Award 2020	2020
Collaborative Achievement in Sustainability Award from Mid-Ohio Regional Planning Commission (as group)	2020
Scholarship of Tiehan, Peking University	2013 – 2016
Honorable mentioned by "Mathematical Contest in Modeling" sponsored by COMAP	2016
President of "Outstanding Class" award winner of PKU	2015

Publications

Journal Articles

Liu, L., Kar, A., Tokey, A. I., Le, H. T. K., & Miller, H. J. (2023). Disparities in public transit accessibility and usage by people with mobility disabilities: An evaluation using high-resolution transit data. *Journal of Transport Geography* (Under review).

Liu, L., Porr, A., & Miller, H. J. (2023). Measuring the impacts of disruptions on the delivery of reliable accessibility by public transit systems. *Transportation* (Under review).

Javanmard, R., Lee, J., Kim, J, **Liu, L.**, and Diab, E. (2023). The impacts of the modifiable spatial unit problem (MSUP) on social equity analysis of public transit reliability. *Journal of Transport Geography*, 106, 103500.

Liu, L., & Miller, H. J. (2022). Measuring the impacts of dockless micro-mobility services on public transit accessibility. *Computers, Environment, and Urban Systems*, 98, 101885. https://doi.org/https://doi.org/10.1016/j.compenvurbsys.2022.101885..

Liu, L., Porr, A., & Miller, H. J. (2022). Realizable accessibility: evaluating the reliability of public transit accessibility using high-resolution real-time data. *Journal of Geographical Systems*, 1-23.

Liu, L., & Miller, H. J. (2020). Measuring risk of missing transfers in public transit systems using high-resolution schedule and real-time bus location data. *Urban Studies*, 0042098020919323.

Liu, L., & Miller, H. J. (2020). Does real-time transit information reduce waiting time? An empirical analysis. *Transportation Research Part A: Policy and Practice*, 141, 167-179.

Liu, L., Miller, H. J., & Scheff, J. (2020). The impacts of COVID-19 pandemic on public transit demand in the United States. *Plos one*, 15(11), e0242476.

Park, Y., Mount, J., **Liu, L.**, Xiao, N., & Miller, H. J. (2019). Assessing public transit performance using real-time data: spatiotemporal patterns of bus operation delays in Columbus, Ohio, USA. *International Journal of Geographical Information Science*, 1-26.

Conference Presentations

Liu, L., Miller, H. J. (2021). Revisiting the Impacts of Transit Real-time Information on Waiting Time Reduction: An Empirical Analysis in Columbus, Ohio. *American Association of Geographers Annual Meeting 2021.*

Liu, L., Miller, H. J. (2019). Measuring public transit transfer risk using highresolution schedule and real-time location data. *American Association of Geographers Annual Meeting 2019*, Washington, DC.

Root, E. D., **Liu, L.**, Porr, A. (2019). Addressing birth outcomes with data analytics and spatial analysis. *18th International Medical Geography Symposium 2019*, Queenstown, New Zealand.

Conference Session

Liu, L., Lee, J., Jed, L., Miller, H. J., Xiao, N. (2023). Data-driven movement analytics. *American Association of Geographers Annual Meeting 2023*, Denver, CO.

Outreach Presentations

Liu, L., Miller, H. J., Schenk, J., Puranik, D. (2022). New data for understanding and planning public transit. *Ohio Public Transit Association Annual Meeting 2022*, Columbus, Ohio.

Research Project Experience

MORPC sustainability dashboard	2019 – 2020

Center for Urban and Regional Analysis, the Ohio State University
Collaboration research with the Mid-Ohio Regional Planning Commission
Public-facing dashboard to track regional progress towards sustainability across
multiple dimensions.

Columbus Urban & Regional Information Observatory (CURIO)	2017 – 2018

Center for Urban and Regional Analysis, the Ohio State University
Collaboration with Dr. Harvey Miller and Dr. Ningchuan Xiao
Visualize and share real-time urban data for the Columbus, Ohio metropolitan region

Infant Mortality Research Partnership (IMRP) online GIS platform	2018 – 2019

Center for Urban and Regional Analysis, the Ohio State University
Collaboration with Dr. Elisabeth Root
Integrate and visualize public health data on infant morality patterns and related
social data in a web-based platform to support research and policy interventions

Neighborhood polygon algorithm based on network analysis	2017 – 2018

Center for Urban and Regional Analysis, the Ohio State University
Collaboration with Dr. Christopher Browning and Dr. Catherine Calder
Develop and apply methods for demarcating neighborhoods based on activity patterns and road network data

Teaching and Public Speaking

The Ohio State University GEOG 5210: Fundamental GIS, 3 credits	2021

Instructor, student SEI rating: 4.71/5 (University average: 4.48), 34 enrollments

University Consortium for Geographic Information Science (UCGIS) Workshop: Full-stack Geo-visualization 101: How to Make Productive Webmaps   2021
Instructor, participants rating: 4.44/5, 19 enrollments

Harvard University Vizathon: Learn to Make Your First Web Map   2021
Workshop organizer and instructor

The Ohio State University GEOG 2200: Mapping Our World   2020
Guest lecturer on geo-visualization

The Ohio State University GEOG 5201: GeoVisualization   2022
Guest lecturer on web-based geo-visualization

West Washington University ENVS 412: Environmental Journalism   2021
Guest lecture on COVID impact on public transit

Media
Ohio State News: "Pandemic has surprising impacts on public transit demand" from https://news.osu.edu/pandemic-has-surprising-impacts-on-public-transit-demand/   2020

Ohio State News: "Want to wait less at the bus stop? Beware real-time updates" from https://news.osu.edu/want-to-wait-less-at-the-bus-stop-beware-real-time-updates/   2020

Grants
"Sharpe Innovation Commons Seed Grant Award" by Geography OSU - $5000   2020
"Everest Project" by Department of Education and Peking University - $6000   2014 − 2017

Service
Peer Review for Journals
Sustainable Cities and Society
Journal of Transport Geography
Journal of Geographical Systems
Public Transport
Transportation
International Journal of Geo-Information
Transportation Research Part C: Emerging Technologies
Case Studies on Transport Policy
Travel Behavior and Society
Transport Policy
Transaction in GIS

Journal of Public Transportation

Transportation Research Record

American Journal of Infection Control

Department/University Service

Graduate Geography Organization, Social Chair   2021 – 2022