

Luyu Liu

The Ohio State University
Department of Geography
0126 Derby Hall, 154 North Oval Mall
Columbus, OH 43210-1361

Email: liu.6544@osu.edu
Website: <https://luyuliu.github.io>
GitHub: <https://github.com/luyuliu>

Research interests

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

Education

The Ohio State University, Department of Geography
Ph.D. Geography
Columbus, Ohio
2019 – 2023 (expected)

The Ohio State University, Department of Educational Studies
Graduate Certificate in College and University Teaching
Columbus, Ohio
2020 – 2021

The Ohio State University, Department of Geography
M.A. Geography
Columbus, Ohio
2017 – 2019

Peking University, College of Urban and Environmental Sciences
B.S. Environmental Science
Beijing, China
2013 – 2017

Peking University, School of Mathematical Sciences
B.S. Mathematics and Applied Mathematics
Beijing, China
2014 – 2017

Theses

Ph.D. dissertation

Accessibility in motion: measure real-time accessibility with high-resolution data
The Ohio State University
Supervisory committee: Dr. Harvey Miller, Dr. Ningchuan Xiao, Dr. Huyen Le,
and Dr. Andre Carrel
2019 – present

Master's thesis

Public transit transfer risk with high-resolution schedule and real-time bus data
The Ohio State University
Supervisory committee: Dr. Harvey Miller, Dr. Ningchuan Xiao, and Dr. Morton
O'Kelly
2018 – 2019

Undergraduate thesis

Measuring and decomposing global CO2 emission inequality
Peking University
Supervisory committee: Dr. Bengang Li
2015 – 2017

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 Research Record* (Under review).

Javanmard, R., Lee, J., Kim, J, **Liu, L.,** and Diab, E. (2022). The impacts of the modifiable spatial unit problem (MSUP) on social equity analysis of public transit reliability. *Journal of Transport Geography* (Under review).

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 high-resolution 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.

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 mortality 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

West Washington University ENV5 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

American Journal of Infection Control

Department/University Service

Graduate Geography Organization, Social Chair 2021 – 2022