YUE LIN

Department of Geography
The Ohio State University
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EDUCATION

2023   **Ph.D., Geography**
The Ohio State University, Columbus, OH
2022   **M.A., Geography**
The Ohio State University, Columbus, OH
2022   **Graduate Certificate in College and University Teaching**
The Ohio State University, Columbus, OH
2019   **B.S., Geographic Information Science**
Wuhan University, Wuhan, China

RESEARCH AND TEACHING INTERESTS

Geospatial data science
Geocomputation
Urban informatics
Digital privacy and justice

AWARDS AND HONORS

External

2023   CaGIS Doctoral Student Scholarship Award, *Cartography and Geographic Information Society*
2023   IJGI Travel Award, *ISPRS International Journal of Geo-Information*
2022   Third Place Doctoral Student Paper Award, *East Lakes Division of the American Association of Geographers*
2022   ICA Scholarship, *International Cartographic Association*
2022   Third Place Student Lightening Talks Award, *University Consortium for Geographic Information Science*
2022   Student Travel Award, *Spatial Analytics and Modeling Specialty Group, American Association of Geographers*
2021   First Place Doctoral Student Paper Award, *East Lakes Division of the American Association of Geographers*
2021   First Place Student Paper Award, *University Consortium for Geographic Information Science*
2021   First Place Award, AAG Robert Raskin Student Competition, *Cyberinfrastructure Specialty Group, American Association of Geographers*
2020   AAG Kauffman Runner-Up Award for Best Student Paper in Geography & Entrepreneurship, *American Association of Geographers*

Internal

2023   E. Willard and Ruby S. Miller Award, *The Ohio State University*
2022   Career Development Grant Award, *Council of Graduate Students, The Ohio State University*
2022   Fenburr Travel Scholarship for Outstanding PhD Student, *The Ohio State University*

2019	Department Travel Scholarship for AAG Annual Meeting, *The Ohio State University*
2019	Outstanding Bachelor's Thesis Award, *Wuhan University*
2019	Outstanding Graduate Award, *Wuhan University*
2018	Wang Zhizhuo Innovative Talent Scholarship (First Class), *Wuhan University*
2017	Zhonghaida Scholarship (First Class), *Wuhan University*
2016–2018	Outstanding Student Award, *Wuhan University*
2016	Second Class Scholarship, *Wuhan University*

GRANTS

2022	PI. Location privacy and confidentiality: Towards ethical geospatial big data harnessing. *UCGIS I-GUIDE Community Champions Program, University Consortium for Geographic Information Science*, $3,000.
2020–2021	Key personnel (with PI: Ningchuan Xiao). Human mobility: Understanding the impact of COVID-19 and its social and economic contexts in Columbus, OH using traffic camera feeds. *National Science Foundation Geospatial Fellows Program, University of Illinois at Urbana-Champaign*, $2,400.

PUBLICATIONS

Refereed Journal Articles

2023	**Lin, Y.** & Xiao, N. Generating small area synthetic microdata from public aggregated data using an optimization method. *The Professional Geographer*. In Press. doi:10.1080/00330124.2023.2207640.
2023	**Lin, Y.** & Xiao, N. A computational framework for preserving privacy and maintaining utility of geographically aggregated data: A stochastic spatial optimization approach. *Annals of the American Association of Geographers*. In Press. doi:10.1080/24694452.2023.2178377.
2022	**Lin, Y.** & Xiao, N. Identifying high accuracy regions in traffic camera images to enhance the estimation of road traffic metrics: A quadtree-based method. *Transportation Research Record*, 2676(12), 522–534.
2021	Zhang, X., **Lin, Y.**, Cheng, C., & Li, J. Determinant powers of socioeconomic factors and their interactive impacts on particulate matter pollution in North China. *International Journal of Environmental Research and Public Health*, 18(12), 6261.
2021	**Lin, Y.**, Kang, M., & He, B. Spatial pattern analysis of address quality: A study on the impact of rapid urban expansion in China. *Environment and Planning B: Urban Analytics and City Science*, 48(4), 724–740.
2020	**Lin, Y.**, Wang, J., & Xu, C. Theoretical and empirical comparative evaluations on measures of map association. *Journal of Geographical Systems*, 22, 361–390.
2020	**Lin, Y.**, Kang, M., Wu, Y., Du, Q., & Liu, T. A deep learning architecture for semantic address matching. *International Journal of Geographical Information Science*, 34(3), 559–576.
2019	**Lin, Y.**, Cai, Y., Gong, Y., Kang, M., & Li, L. Extracting urban landmarks from geographical datasets using a random forests classifier. *International Journal of Geographical Information Science*, 33(12), 2406–2423.

Refereed Conference Proceedings

2022	**Lin, Y.** & Xiao, N. Developing synthetic individual-level population datasets: The case of contextualizing maps of privacy-preserving census data. *AutoCarto 2022 Online Proceedings*, November 2–4, Redlands, CA.

Software

2022   **Lin, Y.**, Xu, C., & Wang, J. sandwichr: Spatial prediction based on spatial stratified heterogeneity. R package version 1.0.4.
https://cran.r-project.org/web/packages/sandwichr/

Manuscripts in Submission

[6] **Lin, Y.** & Xiao, N. Assessing the impact of differential privacy on population uniques in geographically aggregated data: The case of the 2020 U.S. Census. Submitted to *Population Research and Policy Review* on April 4, 2023.
[5] **Lin, Y.** & Xiao, N. Exploring the tradeoff between privacy and utility of geographic data using a multiobjective optimization approach. Submitted to *Geographical Analysis* on March 17, 2023.
[4] **Lin, Y.** Synthetic population data for small area estimation in the United States. Submitted to *Environment and Planning B: Urban Analytics and City Science* on February 16, 2023.
[3] Xiao, N., Kim, M.J., & **Lin, Y.** A multistart and recombination algorithm for finding diverse solutions to spatial aggregation problems. Submitted to *GeoInformatica* on February 11, 2023.
[2] **Lin, Y.**, Xu, C., & Wang, J. sandwichr: Spatial prediction in R based on spatial stratified heterogeneity. Major Revisions at *Transaction in GIS*.
[1] **Lin, Y.**, Li, J., Porr, A., Logan, G., Xiao, N. & Miller, H. Creating building-level, three-dimensional digital models of historic urban neighborhoods from Sanborn Fire Insurance maps using machine learning. Major Revisions at *PLOS ONE*.

PRESENTATIONS ([†] PRESENTING AUTHOR)

Papers Presented at Professional Meetings

2023   Lin, Y.[†] & Xiao, N. Exploring the tradeoff between privacy and utility of geographic data using a multiobjective optimization approach. *The 2023 Annual Meeting of the American Association of Geographers*. March 23–27, Denver, CO.

2023   Lin, Y., Li, J., Porr, A., Logan, G., Xiao, N. & Miller, H.[†] Creating building-level, three-dimensional digital models of historic urban neighborhoods from Sanborn Fire Insurance maps using machine learning. *The 2023 Annual Meeting of the American Association of Geographers*. March 23–27, Denver, CO.

2022   Lin, Y.[†] & Xiao, N. Developing synthetic individual-level population datasets: The case of contextualizing maps of privacy-preserving census data. *AutoCarto 2022, The 24th International Research Symposium on Cartography and GIScience*. November 2–4, Redlands, CA.

2022   Lin, Y.[†] & Xiao, N. Exploring tradeoffs between privacy and utility of geographic data using a multiobjective optimization approach. *The 2022 Annual Meeting of the East Lakes Division of the American Association of Geographers*. October 27–28, Muskegon, MI.

2022   Lin, Y.[†] & Xiao, N. A stochastic spatial optimization approach to privacy and utility of geographically aggregated data. *UCGIS Symposium 2022: GIScience Forward: Meeting the Challenge*. June 7–9, Syracuse, NY.

2022   Lin, Y.[†] & Xiao, N. Location privacy of the geographically aggregated data protected by differential privacy: A case of the United States Census. *The 2022 Annual Meeting of the American Association of Geographers*. February 25–March 1, virtual.

2021   Lin, Y.[†], Xu, C., & Wang, J. sandwichr: An R package for spatial interpolation based on spatial stratified heterogeneity. *The 2021 Joint Annual Meeting of Applied Geography Conference/East Lakes AAG/West Lakes AAG*. October 14–16, virtual.

2021   Lin, Y.[†] & Xiao, N. Identifying high accuracy regions in traffic camera images to enhance density estimation: A quadtree-based method and applications. *UCGIS Symposium 2021: Advancing GIScience-informed Policy Solutions*. June 7–11, virtual.

2021	Lin, Y.[†] & Xiao, N. Traffic density estimation from camera feeds: An approach using deep learning and high accuracy regions. *The 2021 Annual Meeting of the American Association of Geographers*. April 7–11, virtual.
2021	Lin, Y.[†], Kang, M., Wu, Y., Du, Q., & Liu, T. A deep learning architecture for semantic address matching. *The 2021 Annual Meeting of the American Association of Geographers*. April 7–11, virtual.
2020	Lin, Y.[†], Cai, Y., Gong, Y., Kang, M., & Li, L. Extracting urban landmarks from geographical datasets using a random forests classifier. *Symposium on AI and Social Good, Carnegie Mellon University*. April 23–24, virtual.

Campus and Departmental Talks

2023	Lin, Y.[†] Privacy and utility of geographic data. *Graduate Colloquium, The Ohio State University*. January 20, Columbus, OH.
2022	Lin, Y.[†] Exploring tradeoffs between privacy and utility of geographic data. *GeoWeek, The Ohio State University*. November 14, Columbus, OH.
2022	Lin, Y.[†] Navigating tradeoffs between privacy and utility in geographic data releases. *Geography Grad Students' Reports from the Field, The Ohio State University*. September 23, Columbus, OH.
2021	Lin, Y.[†] & Xiao, N. Does differential privacy protect location privacy in geographically aggregated data publication? *3C GIS Day(s), The Ohio State University*. November 15–19, virtual.
2020	Lin, Y.[†] & Xiao, N. Traffic density estimation from camera feeds: An approach using deep learning and high accuracy regions. *GeoWeek, The Ohio State University*. November 16, virtual.
2020	Lin, Y.[†], Cai, Y., Gong, Y., Kang, M., & Li, L. Extracting urban landmarks from geographical datasets using a random forests classifier. *Geography Visit Day, The Ohio State University*. March 20, virtual.

Poster Presentations

2023	Lin, Y.[†] & Xiao, N. Exploring tradeoffs between privacy and utility of geographic data using a multiobjective optimization approach. *The 37th Edward F. Hayes Advanced Research Forum, The Ohio State University*. February 24, Columbus, OH.
2022	Lin, Y.[†] & Xiao, N. Generating small area synthetic microdata for public use: Towards accessible and reproducible spatial data science. *2022 Interdisciplinary Research Fall Forum, The Ohio State University*. November 7–9, Columbus, OH.
2022	Lin, Y.[†], Li, J., Porr, A., Logan, G., Xiao, N. & Miller, H. Ghost neighborhoods of Columbus: Reconstructing historical neighborhoods from Sanborn maps using machine learning. *2022 Interdisciplinary Research Fall Forum, The Ohio State University*. November 7–9, Columbus, OH.
2022	Lin, Y.[†] & Xiao, N. A stochastic spatial optimization approach to privacy and utility of geographically aggregated data. *UCGIS Symposium 2022: GIScience Forward: Meeting the Challenge*. June 7–9, Syracuse, NY.

Invited Panelist

2021	Towards transparent and ethical human mobility data. *Geospatial Fellows Webinar Series, University of Illinois at Urbana-Champaign*. June 28, virtual.

MEDIA COVERAGE

2022   Logan Nowlin. Lost Columbus communities reborn with Ghost Neighborhoods project. *The Lantern*. November 22. https://www.thelantern.com/2022/11/lost-columbus-communities-reborn-with-ghost-neighborhoods-project/

2022   Jeff Grabmeier. Recreating "ghost neighborhoods" destroyed by highways: Ohio State researchers studying impact on vulnerable communities. *Ohio State News*. September 15. https://news.osu.edu/recreating-ghost-neighborhoods-destroyed-by-highways/

TEACHING

The Ohio State University

2022   **Instructor of Record**
GEOG 5201: Geovisualization (Spring 2022)

2019–2021   **Graduate Teaching Associate**
GEOG 4103: Introductory Spatial Data Analysis (Spring 2021)
GEOG 5226: Spatial Simulation and Modeling in GIS (Autumn 2020)
GEOG 5201: Geovisualization (Spring 2020 & Autumn 2021)
GEOG 5222: GIS Algorithms and Programming (Autumn 2019)

SERVICE

University

2020–2021   Ph.D. Representative on Graduate Studies Committee, Graduate Geography Organization, *The Ohio State University*

Professional

2023   Fellow, Geography Faculty Development Alliance Workshop, *American Association of Geographers*

2023   Fellow, Grad WINGS (Women+ in Geospatial Science) Workshop, *Training and Retaining Leaders in STEM - Geospatial Sciences (TRELIS-GS) Program, University Consortium of Geographic Information Science*

2023   Research Mentor, Research Mentoring Sessions, The 2023 Annual Meeting of the American Association of Geographers, *American Association of Geographers*

2022–2023   Committee Member, Education Committee, *University Consortium for Geographic Information Science*

2022   Student Assistant, AutoCarto 2022, The 24th International Research Symposium on Cartography and GIScience, *Cartography and Geographic Information Society*

2022   Co-Chair (with Rachel Arney), Organizing Committee, AAG 2022 Summer Series Graduate Forums, *American Association of Geographers*

2021–2022   Committee Member, Award Committee, Graduate Student Affinity Group (GSAG), *American Association of Geographers*

Reviewer for Academic Journals

Annals of GIS
International Journal of Environmental Research and Public Health
ISPRS International Journal of Geo-Information
Sensors
Sustainability
Transactions in GIS

Professional Memberships

American Association of Geographers
Cartography and Geographic Information Society

SKILLS

Programming languages: Python, R, C/C++, NetLogo
Geospatial software: ArcMap, ArcGIS Pro, ArcGIS CityEngine, QGIS