

LIANG CAI

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EDUCATION

The University of Chicago

Committee: Drs. Kathleen Cagney, Luc Anselin, Christopher Browning

Chicago, IL
2019 - present

- Ph.D. in Sociology

Dissertation: Social Interaction and Activity Space in Real-Time

- Summer Institutes in Computational Social Science (SICSS), Northwestern Kellogg (2024)
- ICPSR Summer Program, University of Michigan (2022)
- Certificate in Computational Social Sciences (2022)
- Certificate in Advanced Quantitative Methods (2021)

- M.A. in Social Sciences (2018)

Utrecht University

Advisor: Dr. Stijn Ruiter

Utrecht, The Netherlands
2017

- M.Sc. in Sociology and Social Research

Nanjing University

Graduate with Distinction

Nanjing, China
2015

- B.A. in Social Work

RESEARCH INTEREST

Research Interest Urban/Rural Sociology, Activity Space, Crime Geography, Aging

Links  Google Scholar  ORCID  Personal Website

PUBLICATION & PRESENTATION

PEER REVIEWED ARTICLES

≡Equal Author | ✉Corresponding Author (if not first author) | IF 3.5 Impact Factor

Published

- [13] Goldman, A. W., **Cai, L.**, & Browning C. R. (2025). [No Place Like Home? Local Crime and Older Adults' Mobility](#). *Social Problems*. IF 3.5
- [12] Zhang, Y., **Cai, L.**, Song, G., & You, Y. (2024). [Causal Effect of Small Businesses on Street Theft: Evidence from a Natural Experiment of the Beijing Cleanup Campaign](#). *Journal of Quantitative Criminology*. 40, 727-760. IF 3.4
- [11] **Cai, L.**, Browning, C. R., & Cagney, K. A. (2024). [Exposure of Neighborhood Racial and Socio-Economic Composition in Activity Space: A New Approach Adjusting for Residential Conditions](#). *Social Forces*. 103(1), 350-373. IF 4.3

- [10] Zhang, Y.[✉], **Cai, L.**[✉], & Zhu, C. (2024). [Understanding Suicidal Ideation in China: Nationwide Distribution, Social Determinants and Geographic Variations](#). *Humanities and Social Sciences Communications*. 11, 1715. IF 3.7
- [9] **Cai, L.**, Song, G., & Zhang, Y. (2024). [Understanding Neighborhood Income Segregation Around the Clock Using Mobile Phone Ambient Population Data](#). *Humanities and Social Sciences Communications*. 11, 343. IF 3.7
- [8] Kwiatek, S. M., **Cai, L.**, Cagney, K. A., Copeland, W. E., Hotz, V. J., & Hoyle, R. H. (2024). [Comparative Assessment of the Feasibility and Validity of Daily Activity Space in Urban and Non-Urban Settings](#). *PLoS ONE*. 19(1), e0297492. IF 2.9
- [7] Zhang, Y., **Cai, L.**, Song, G., & Zhu, C. (2023). [Long-Term Theft Prediction in Beijing Using Machine Learning Algorithms: Comparison and Interpretation](#). *Crime and Delinquency*. IF 2.0
- [6] Song, G., **Cai, L.**, Xiao, L., Liu, L., & Wu, Y., Yue, H. (2023). [Effects of Ambient Population with Different Income Levels on the Spatio-Temporal Pattern of Theft: A Study Based on Mobile Phone Big Data](#). *Cities*. 137, 104331. IF 6.0
- [5] **Cai, L.**, Cagney, K. A., Browning, C. R., & York Cornwell, E. (2022). [How to Analyze GPS/Location Data](#). *Sage Research Methods: Doing Research Online*.
- [4] Zhang, Y., **Cai, L.**, Song, G., Liu, L. & Zhu, C. (2022). [From Residential Neighborhood to Activity Space: The Effects of Educational Segregation on Crime and Their Moderation by Social Context](#). *Annals of American Association of Geographers*. 112(8): 2393–2412. IF 4.4
- [3] Song, G., Zhang, Y., Bernasco, W., **Cai, L.**, Liu, L., Qin, B., & Chen, P. (2021). [Residents, Employees and Visitors: Effects of Three Types of Ambient Population on Theft on Weekdays and Weekends in Beijing, China](#). *Journal of Quantitative Criminology*. 39, 385–423. IF 3.4
- [2] Cagney, K. A., York Cornwell, E., Goldman, A. W., & **Cai, L.** (2020). [Urban Mobility and Activity Space](#). *Annual Review of Sociology*. 46, 623-648. IF 8.9
- [1] Song, G., Liu, L., He, S., & **Cai, L.** (2020). [Safety Perceptions among African Migrants in Guangzhou and Foshan, China](#). *Cities*. 99, 102624. IF 6.0

Manuscript

- Song, G., Fan, Z., **Cai, L.**, & Zhang, Y. (2024). [Quantity or Spatial Coverage? Using Interpretable Machine Learning to Evaluate the Relationship between Police Stops and Crime](#). R&R at Police Quarterly. IF 3.2
- Cai, L.**, Browning, C. R., & Anselin, L. (2024). [The Social Context of Spatial Choice: Activity Space Locations and Residential Segregation](#) (OSF Preprint). Under Review.
- Cai, L.**, Song, G., & Zhang, Y. (2024). [Neighborhood Context Shapes Effects of Physical Disorder and Spatial Knowledge on Burglars' Location Choice](#) (SocArXiv Preprint). Under Review.
- Zhang, Y.[✉], You, Y.[✉], **Cai, L.**[✉], Song, G., & Anselin, L. (2024). [Non-spatial and Spatial Inequalities in Exposure to Physical Disorder across Chinese Cities Using Urban Visual Intelligence](#). Under Review.
- Kwiatek, S. M., **Cai, L.**, Brann, P., Cagney, K. A., Copeland, W. E., Hotz, V. J., & Hoyle, R. H., (2024). [Rurality: Geographic Classifications and People's Perceptions](#). Under Review.
- Song, G.[✉], **Cai, L.**[✉], Bernasco, W., Xiao, L., & Zhang, X. (2024). [Can Mobility Flows of Native and Migrant Residents Better Explain Thieves' Crime Location Choice?](#) Preparing for Submission.

Cai, L., Kang, Y., & Cagney, K. A. (2025). How Do We Make Spatial Choice? An Experiment. In Preparation.

Cai, L., Song, G., & Cagney, K. A. (2025). The Spatial Structure of Everyday Mobility Among Chinese Urban Older Adults. In Preparation.

Cai, L. (2024). How Do We Make Spatial Choice? An Experiment. In Preparation.

REPORTS

Cuesta, J., **Cai, L.**, Madrigal, L., & Recorari, N. (2023). [Exposure to Climatic Risks and Social Sustainability in Vietnam](#). *Sustainability*.

Aguilera, A. I. & **Cai, L.** (2022). Social Vulnerability to Climate Change. The World Bank.

Sacks, A., Vemuru, V., **Cai, L.**, Ilukor, J., Michael, M., & Sanchez, E. (2020). Using Big Data to Inform the Response to Vulnerability in Uganda's Settlements and Host Communities. The World Bank.

Sacks, A., Fuchs, A., Cancho, C., **Cai, L.**, & Sanchez, E. (2019). Big Data and Vulnerability Mapping: Regional Development and Vulnerability in Azerbaijan (Report No. AUS0000762). The World Bank.

PRESENTATIONS

Cai, L. (2025). Making Burglary Choice in Social Context: Neighborhood Concentrated Disadvantage, Spatial Knowledge, and Physical Disorder.

- *Annual Meeting of Population Association of America* (PAA @IAD)

Cai, L. (2024). Rethinking Rurality: Evidence from GPS Location Tracking in North Carolina.

- *Annual Meeting of Population Association of America* (PAA @CMH)

Cai, L. (2024). The Social Context of Spatial Choice: Activity Space and Residential Segregation.

- *Spatial, Computational, and Real-time Analytic Methods workshop* (SCRAM @Zoom)

- *Annual Meeting of Population Association of America* (PAA Poster @CMH)

Cai, L. Neighborhood Segregation Around the Clock Using Mobile Phone Ambient Population Data

- *Annual Meeting of Population Association of America* (PAA @MSY, 2023)

- *International Doctoral Symposium* (HKBU @HKG, 2024)

Cai, L. (2022). Homing in: Methodological Challenges in Assessing Time at Home Using GPS Data.

- *Spatial, Computational, and Real-time Analytic Methods workshop* (SCRAM @Zoom)

Kwiatek, S., & **Cai, L.** (2022). Feasibility & Reliability of Activity Space Research in Rural Settings.

- *Collaborative for Innovation in Data & Measurement in Aging* (CIDMA @ORD)

Cagney, K. A. & **Cai, L.** (2021). Activity Space, Social Interaction and Health in Later Life.

- *Quant. Research Methods in Edu., Health, and Soc. Sci. workshop* (QMEHSS @Zoom)

Cai, L., Browning, C., & Cagney, K. A. Detecting Racial Segregation in Activity Space: New Measures Adjusting for Residential Segregation.

- *Collaborative for Innovation in Data & Measurement in Aging* (CIDMA @ORD, 2022)

- *Mobile Apps and Sensors in Surveys workshop* (MASS @MAN, 2023)

Cai, L. (2019). Active Streets and Crime Revisited: Understanding Crime Opportunities and Monitoring Eyes in the Public Space with Chicago Streets.

- *Annual Meeting of Environmental Criminology and Crime Analysis* (ECCA @CAN)

- *Annual Meeting of American Society of Criminology* (ASC @SFO)

Cai, L. & Ruiter, S. (2017). Victimization in Context.

- *International Conference on Crime Geography and Crime Analysis* (CGCA @CAN)

HONORS AND AWARDS

- Henderson Research Fund: Department of Sociology, 2024 - 2025
- Travel Grant, Center on Healthy Aging Behaviors and Longitudinal InvestigationS CHABLIS, 2024
- Urban Doctoral Fellow: Mansueto Institute for Urban Innovation, 2020 - 2021
- Research Travel Grant: Graduate Council, 2019, 2023, 2024
- Social Science Fellowship: Department of Sociology, 2019 - 2025
- Social Science Scholarship, 2017 - 2018
- Holland Scholarship, 2015
- National Student Innovation Grant: Chinese Ministry of Education, 2014 - 2015
- University Scholarships, 2012 - 2015

EMPLOYMENT

Activity Space in Real-Time *National Opinion Research Center (NORC), Chicago, IL*
Graduate Research Assistant | Part-time 2019 - present

Survey instrument design, proposal writing and grant application, data validation/analysis on NIH- and NSF-funded activity space projects in urban and rural America (CHART, GSMS, RAISE).

Vulnerability Mapping Using Big Data *The World Bank*
Social Development Consultant | Part-time

Constructed and mapped vulnerability index using publicly-available remote sensing and crowd-sourced big data for under-developed countries to inform targeting strategies and policy interventions.

TEACHING EXPERIENCE

Intro to Spatial Data Science (Dr. Luc Anselin) **Autumn, 2020 & 2021**

Intro to GIS and Spatial Analysis (Dr. Marynia Kolak) **Spring, 2021**

Statistical Methods of Research (Dr. Ross Stolzenberg) **Winter, 2022**

Police Reform Policy Lab (Dr. Santiago Tobon) **Spring, 2022**

MEMBERSHIP, SERVICES, AND EXTRACURRICULAR ACTIVITIES

Professional Membership

- Population Association of America (PAA), American Sociological Association (ASA), American Society of Criminology (ASC)

Peer Review

- *Sociology*: American Journal of Sociology, Social Problems
- *Geography*: Urban Studies, Applied Geography
- *Criminology*: Journal of Criminal Justice

Other Services

- Judge for Goffman Prize for BA Thesis, UChicago

PROFESSIONAL REFERENCES

Luc Anselin (co-chair)

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Director of Center for Spatial Data Science

Stein-Freiler Distinguished Service Prof. of Sociology

The University of Chicago

Kathleen Cagney (co-chair)

kcagney@umich.edu

734-763-3798

Director of Institute for Social Research

Professor of Sociology

University of Michigan

Christopher Browning

browning.90@osu.edu

614-292-2983

ASC Distinguished Professor of Sociology

The Ohio State University

BACKGROUND

Skills	GIS, Remote Sensing, and Spatial Analysis Quantitative and Computational Methods Visualization
Software	Python, R, Stata, L ^A T _E X, Github ArcGIS, GeoDa, and QGIS
Background	Chinese Mandarin/Wu (Native) 中文名：蔡樑