

LIANG CAI

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 Google Scholar

 ORCID

 Personal Website

 Faculty Page

EMPLOYMENT

University of North Carolina-Charlotte

Assistant Professor

Charlotte, NC

2026 - present

- Department of Criminal Justice and Criminology
- Faculty Affiliate, School of Data Science

NORC at The University of Chicago

Graduate Research Assistant

Chicago, IL

2019 - 2026

The World Bank

Social Development Consultant

The World Bank

2018 - 2019

EDUCATION

The University of Chicago

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

Chicago, IL

2026

- Ph.D. in Sociology (highest internal honor)
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, UChicago (2022)*
 - *Certificate in Advanced Quantitative Methods, UChicago (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 INTERESTS

Crime Geography, Urban/Rural Sociology, Aging, Activity Space, Human Mobility
Spatial Data Science, Quantitative Research Methods, Computational Social Science

PUBLICATION & PRESENTATION

PEER REVIEWED ARTICLES

≡Equal Author | IF 4.6 Impact Factor

Published/Forthcoming (incl. R&R)

- [19] **Cai, L.**, Browning, C. R., & Cagney, K. A. (2026). Neighborhood Social, Physical, and Network Conditions Shape Older Adults' Everyday Safety. R&R at *Journal of Gerontology Series B: Social Sciences*. IF 4.5
- [18] **Cai, L.**, Zhang, Y., & Song, G. (2026). [Neighborhood Context and Spatial Knowledge Shape Effects of Physical Disorder on Burglars' Location Choice](#). Forthcoming at *Journal of Quantitative Criminology*. IF 4.2
- [17] **Cai, L.**, Zhu, C., & Cagney, K. A. (2026). [The Built Environment and Momentary Loneliness among Older Adults](#). *98, Health & Place*. IF 4.8
- [16] **Cai, L.**, Browning, C. R., & Anselin, L. (2026). [The Social Context of Spatial Choice: Activity Space Locations and Residential Segregation](#). *Demography*. *63*(1), 263-290. IF 4.6
- Featured on *PAA*, 2026; Featured on *Sociological Review* and *Global Sociology Digest*, 2025
- [15] Zhang, Y., You, Y., Pan, Z., **Cai, L.**, & Qin, B. (2026). [Community-Level Education Percentile Rank Estimation in China using Multi-Source Big Data and Machine Learning](#). *Scientific Data*. *13*, 304. IF 8.7
- [14] Goldman, A. W., **Cai, L.**, & Browning C. R. (2026). [No Place Like Home? Local Crime and Older Adults' Mobility](#). *Social Problems*. *73*(1), 171-191. IF 3.5
- [13] Song, G., Fan, Z., **Cai, L.**, & Zhang, Y. (2025). [Quantity or Spatial Coverage? Using Interpretable Machine Learning to Evaluate the Relationship between Police Stops and Crime](#). *Police Quarterly*. *28*(4), 539-563. IF 3.2
- [12] Zhang, Y., You, Y., Chen, S., **Cai, L.** (2025). [Geospatial Dataset on Human Perceptions of Wealth and Physical Disorder in Urban China Using Street View Imagery and Deep Learning](#). *Data in Brief*. *63*. 112116. IF 1.4
- [11] 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 4.2
- [10] **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
- [9] 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
- [8] **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
- [7] 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

- [6] Zhang, Y., **Cai, L.**, Song, G., & Zhu, C. (2023). [Long-Term Theft Prediction in Beijing Using Machine Learning Algorithms](#). *Crime and Delinquency*. 71(6-7), 2061-2091. IF 2.0
- [5] 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
- [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 4.2
- [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

Edited Volume

- [1] **Cai, L.**, Cagney, K. A., Browning, C. R., & York Cornwell, E. (2022). [How to Analyze GPS/Location Data](#). *Sage Research Methods: Doing Research Online*.

Manuscripts

Cai, L., Browning, C. R., & Anselin, L. (2026). Trajectories of Racial and Ethnic Inequality across America’s 50 Largest MSAs 1990-2020: Demographic Landscape and Organizational Resources. In Preparation.

- *Annual Meeting of Population Association of America (PAA @STL, 2026)*

Liu, Y. & **Cai, L.** (2026). The Spatial Structure of Urban Mobility in China: Age, Resources, and Network Dynamics. In Preparation.

- *Annual Meeting of Population Association of America (PAA @STL, 2026)*

Cai, L., Soller, B., Browning, C. R., & Postalakis, J. (2026). Immigration and Everyday Mobility Patterns. In Preparation.

- *Annual Meeting of American Society of Criminology (ASC @CHI, 2026)*

Song, G.[≡], **Cai, L.**[≡], Bernasco, W., Xiao, L., & Zhang, X. (2026). Can Mobility Flows of Native and Migrant Residents Better Explain Thieves’ Crime Location Choice? Under Review.

Kwiatek, S. M., **Cai, L.**, Brann, P., Cagney, K. A., Copeland, W. E., Hotz, V. J., & Hoyle, R. H., (2026). Rurality: Geographic Classifications and People’s Perceptions. In Preparation.

Cai, L. (2026). How Do We Make Spatial Choices? A Multi-Agent Experiment with Humans and Generative AI. In Preparation.

REPORTS

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

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. The World Bank.

PRESENTATIONS

Cai, L. (2026). Neighborhood Social, Physical, and Network Conditions Shape Older Adults' Everyday Safety.

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

- *Annual Meeting of American Sociological Association* (ASA @NYC)

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

- *Annual Meeting of Population Association of America* (PAA @DC, 2025)

- *Annual Meeting of American Sociological Association* (ASA @CHI, 2025)

- *Annual Meeting of American Society of Criminology* (ASC @SFO, 2024)

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 & Residential Segregation.

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

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

Cai, L. 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 with GPS.

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

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

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

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 @CHI, 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

The University of Chicago

- Provost Dissertation Fellowship, 2025 [**One of UChicago's highest grad student honors*]
- Henderson Research Fund: Department of Sociology, 2024, 2025
- Travel Grant, Center on Healthy Aging Behaviors and Longitudinal InvestigationS, 2024-2026
- Urban Doctoral Fellow: Mansueto Institute for Urban Innovation, 2020-2021
- Research Travel Grant: Graduate Council, 2019, 2023, 2024
- Social Science Fellowship: Department of Sociology, 2019-2026
- Social Science Scholarship, 2017-2018

Utrecht University & Nanjing University

- Holland Scholarship, 2015
- National Student Innovation Grant: Chinese Ministry of Education, 2014-2015
- University Scholarships, 2012-2015

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
Int'l Dev. Policy Lab (Dr. Rebecca Wolfe)	Winter & Spring, 2023
	Winter, 2024

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*: Journal of Transport Geography, Urban Studies, Applied Geography, Discover Cities, International Journal of Health Geographics
- *Criminology*: Journal of Quantitative Criminology, Journal of Criminal Justice
- *Health*: BMC Geriatrics, Health & Place
- *General*: EPJ Data Science, Scientific Reports, Humanities and Social Sciences Communications

PROFESSIONAL REFERENCES

Luc Anselin (co-chair)

anselin@uchicago.edu

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

Director of Institute for Social Research

Professor of Sociology

University of Michigan

Christopher Browning

browning.90@osu.edu

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 & Status	Chinese Mandarin/Wu (Native) 中文名：蔡樑 First-Gen College Student U.S. Permanent Resident