LIKUN CAO 曹立坤

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ACADEMIC APPOINTMENT

2025- Assistant Professor of Sociology, Purdue University

EDUCATION

Ph.D.   Department of Sociology, University of Chicago, 2025

Dissertation: Combinatorial Innovation in Science, Technology, Organizations, and across Society

Committee: James Evans (Chair), John Padgett, Elisabeth Clemens, Dashun Wang

Certificates: Computational Social Sciences (2022); Advanced Quantitative Method (2021)

M.A   Department of Sociology, University of Chicago, 2021

M.A.   Department of Sociology, Tsinghua University, 2019

B.A.   Department of Sociology, Tsinghua University, 2016

RESEARCH INTERESTS

Computational Social Science; Knowledge; Science of Science; AI and Society; Networks

PUBLICATIONS

Peer-Reviewed Journal Articles

[†] indicates students I mentored, [‡] indicates that I am the corresponding author

Forth.   **Cao, L.,** & Evans, J. Deep versus Broad Technology Search and the Timing of Innovation Impact. *Technological Forecasting and Social Change.*

2025   **Cao, L.** [‡]**,** Cai, X[†]. Decreasing Disruption and Increasing Concentration of Artificial Intelligence. *Minds and Machines*, *36*(4).

2025   Choi, Y., **Cao, L.** [‡]**,** Tarrence, J., Zheng, H. & Qian, Z. Identifying the social mechanisms for multiracial-monoracial health disparities. *Humanities and Social Science Communications, 12,* 1208.

2023   Ren, J., Li, X., & **Cao, L**. Manager Mobility and Private Equity Syndications from the Perspective of Coupling Networks: Evidence from China's Private Equity Industry, *Journal of Social Computing, 4*(2), 150-167.

2022   **Cao, L.** [‡] & Ren, J. Machine learning shows that the Covid-19 pandemic is impacting U.S. public companies unequally by changing risk structures, *PLOS ONE, 17*(6), e0269582.

2022   **Cao, L.,** Chen, Z. [†], & Evans, J. Destructive Creation, Creative Destruction, and the Paradox of Innovation Science. *Sociology Compass, 16*(11), e13043.

2022   Zheng, L., **Cao, L.**, Ren, J., Li, X., Yin, X., & Chen, J. How venture capital firms choose syndication partners: the moderating effects of institutional uncertainty and investment preference, *Management and Organization Review, 18*(3), 463-490.

2018   Zheng, L., He, X**.,** **Cao, L.,** & Xu, H. Making modernity in China: employment and entrepreneurship among the new generation of peasant workers, *International Journal of Japanese Sociology, 27*(1), 26-40.

Book Reviews

2023   **Cao, L.** [‡]**,** & Mao, H[†]. Book Review for Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence. *Journal of Intelligent Society, 2*(4): 192-206. [In Chinese]

In Submission

Cao, L., & Li, K. How were BERT Proliferated: Development, Collaboration, and Academic Influence of BERT-Family Models. Minor Revision at *Quantitative Science Studies.*

Cao, L., & Dai, L. Large Language Models as a Conduit for Value Shifts in Contemporary China. R&R at *Chinese Sociological Review.*

Cao, L, Zhang, L. & Evans, J. Spinning a Web in a Bottle: Networks, Organizational Structure and Career Success. R&R at *American Journal of Sociology.*

Cao, L., Pan, R. [†], & Evans, J. Subjective Perspectives within Learned Representations Predict High-Impact Innovation. Reject and Resubmit at *Nature.*

Cao, L., Chen, Z. [†], & Evans, J. Modularity, Higher-Order Invention and New Venture Success. Reject and Resubmit at *Research Policy.*

Cao, L., & Evans, J. Curved Embedding as Powerful Representations for Hierarchical Knowledge System. Under review at *Journal of Mathematical Sociology.*

Cao, L., Hua, J., & Evans, J. From Elite to Mass Science: How Expanding Scholarly Families Reshape Academic Stratification. Under Review at *American Sociological Review*.

Cao, L. When Technology Shapes Creativity: VFX Innovation, Industrial Transformation, and the Rise and Fall of a New Cinematic Genre. Under Review at *Poetics*.

In Preparation

Aceves, P., Chambers C., Alves, M., **Cao, L.** & Evans, J. Middle-Status Myopia.

Zhong, Q., & **Cao, L**. Comparing Social Learning Strategies in Collective Search: Simulation and Empirical Evidence in Patent Data.

FELLOWSHIPS, AWARDS AND HONORS

2025	Purdue EXCEL Research Grant ($25,000)
2024	Charles Henderson Research Fund-Final Round, University of Chicago ($2000)
2024	Institute for Humane Studies Graduate Student Fellowship ($5000)
2024	Summer Residency Award, UChicago Beijing Center ($2000)
2023-2024	Mansueto Institute Doctoral Fellow, University of Chicago ($1000)
2023	Charles Henderson Research Fund, University of Chicago ($4000)
2022	Chan and Li Pre-Dissertation Research Grant, University of Chicago ($1650)
2019-2026	Various Travel Grants from SSD and UChicago Grad Council
2019-2026	UChicago Graduate Fellowship for Ph.D. students
2018	Chinese National Scholarship for Graduate Students (top 1%) (¥20000)
2018	Data Science Research Grant, Tsinghua-Qingdao Data Science Institute (€ 4000)
2016	Comprehensive Excellence Scholarship, Tsinghua University (¥ 5000)

CONFERENCE ACTIVITY

2024   Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems, 3rd International Conference on Science of Science and Innovation (ICSSI), Washington, DC, July 1st-3rd.

2024   Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems, 84th AOM Annual Meeting, Chicago, IL, August 9th-13th.

2024   Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems 10th International Conference on Computational Social Science (IC2S2), Philadelphia, PA, July 18th-20th.

2024   Comparing Social Learning Strategies in Collective Search: Simulation and Empirical Evidence in Technology and Culture Data, 74th Annual Conference of the International Communication Association, Austrilia, June 20th-24th.

2024   Comparing Social Learning Strategies in Collective Search: Simulation and Empirical Evidence in Technology and Culture Data, 16th Annual INAS Conference, Germany, May 30th-31st.

2023   Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems, 118th ASA Annual Meeting, Philadelphia, PA, August 17th-21st.

2023   Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems, 2nd International Conference on Science of Science and Innovation (ICSSI), Chicago, IL, June 26th-29th.

2023   The Geometry of Perspective: Predicting Personal Innovation with Dynamic Models of Subjectivity, 118th ASA Annual Meeting, Philadelphia, PA, August 17th-21st.

2023   Comparing Social Learning Strategies in Collective Search: Simulation and Empirical Evidence in Technology and Culture Data, 9th International Conference on Computational Social Science (IC2S2), Copenhagen, DK, July 17th-20th.

2023   Modularity, Higher-Order Invention and New Venture Success, 83rd AOM Annual Meeting, Boston, MA, August 4th-8th.

2022   Modularity, Higher-Order Invention and New Venture Success, 1st International Conference on Science of Science and Innovation (ICSSI), Washington, DC, June 7th-9th.

2022   Modularity, Higher-Order Invention and New Venture Success, 8th International Conference on Computational Social Science (IC2S2), Chicago, IL, July 19th-22nd.

2021   Modularity, Higher-Order Invention and New Venture Success, 116th ASA Annual Meeting, Virtual, August 6th-10th.

2021   Modularity, Higher-Order Invention and New Venture Success, 7th International Conference on Computational Social Science, Virtual, July 27th-31st.

2018   Choice of Co-investment Partners of Chinese Venture Capital Firms, ICSA Annual Conference, Princeton, NJ, August 10th.

INVITED TALKS

2025   Firstborns of Academia: The Privileges of Early Disciples in Scholarly Families. Sociological Theory Forum, March. [In Chinese]

2024   The Geometry of Perspective: Predicting Personal Innovation with Dynamic Models of Subjectivity, Zhejiang University, Sociology Department, October. [In Chinese]

2023   The Geometry of Perspective: Predicting Personal Innovation with Dynamic Models of Subjectivity, Computational Social Science Workshop, The University of Chicago, December.

2022   Higher-Order Invention and New Venture Success, Santa Fe Institute Graduate Workshop in Computational Social Science (GWCSS), June.

2022   Higher-Order Invention and New Venture Success, University of Pittsburgh, School of Computing and Information, November.

2021   Modeling Social Contexts and Economic Landscape by Text Analysis, ProQuest's 3rd Annual Fall Faculty Webinar, Virtual, October.

TEACHING EXPERIENCE

University of Chicago, Teaching Assistant

Computational Content Analysis (fall 2024)

Deep Learning for Complex Social and Cultural Data Analysis (winter 2021, winter 2022)

Statistical Methods of Research (winter 2022)

Innovators (winter 2020)

Tsinghua University, Teaching Assistant

Financial Sociology (spring 2019)

Social Network Analysis (spring 2018)

Big Data Analytics (autumn 2018)

OTHER TRAINING

Summer School/Workshop/Reading Camp

The Summer Institutes in Computational Social Science (SICSS Chicago), 2024

Carnegie School of Organizational Learning Summer School, 2023

HBS Summer School in Computational Organization Science, 2023

Santa Fe Institute Graduate Workshop in Computational Social Science, 2022

Swarma-Kaifeng Foundation Reading Camp for Complex System, 2020

Sun Yat-sen Workshop on Artificial and Computational Social Sciences, 2017

Online Courses and Tutorials

Coursera: Applied Data Science with Python Specialization, Deep Learning Specialization

Complexity Explorer: Introduction to Complexity, Introduction to Renormalization

SERVICE

Editorial Work

American Journal of Sociology Associate Editor, 2022-2023

American Journal of Sociology Manuscript Board Member, 2021-2022

Academic Translator and Proofreader

Social Science Academic Press: Social Network Analysis: Methods and Examples, 2019

Community Service

ASSIS&T SIGMET Officer, 2025-2026

ASA SKAT fundraising committee, 2024

Reviewer

Journal: American Journal of Sociology, American Sociological Review, Social Forces, Strategic Management Journal, Organization Science, Technovation, Technological Forecasting and Social Change, The Journal of Mathematical Sociology, Chinese Journal of Sociology, Journal of Social Computing, Journal of Computational Social Science, Humanities and Social Sciences Communications, Social Science Computer Review, Oxford Research Encyclopedia, Nature Scientific Data

Conference: AOM Annual Meeting, SMS Annual Conference, IC2S2

Workshop/Conference Organizer

 "Advances in Computational Methods", ASA Annual Meeting Method Section, 2026

ICSSI Best Student Talk Award Committee, 2024

UChicago SSD B.A. thesis award committee, 2022-2023

Tsinghua social science seminar discussant, 2023

Program committee member for IC2S2, 2023

Swarma CSS reading group moderator, 2022

<u>REFERENCES</u>

References available upon request.