

# 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; Science and Technology; AI and Society; Networks

## PUBLICATIONS

### Peer-Reviewed Journal Articles

<sup>†</sup> indicates students I mentored, <sup>‡</sup> indicates that I am the corresponding author

2026 **Cao, L.,** & Li, K. How were BERT Proliferated: Development, Collaboration, and Academic Influence of BERT-Family Models. *Quantitative Science Studies*. Forthcoming.

2026 **Cao, L.,** & Evans, J. Deep versus Broad Technology Search and the Timing of Innovation Impact. *Technological Forecasting and Social Change*, 225. 124488.

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

- 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.**, Chen, Z. <sup>†</sup>, & 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.

### Book Reviews

- 2023 **Cao, L.** <sup>‡</sup>, & Mao, H. <sup>†</sup>. 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.**, & 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.**, Chen, Z. <sup>†</sup>, & Evans, J. Modularity, Higher-Order Invention and New Venture Success. R&R at *Research Policy*.

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

**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 1 <sup>st</sup> -3 <sup>rd</sup> .
2024	Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems, 84th AOM Annual Meeting, Chicago, IL, August 9 <sup>th</sup> -13 <sup>th</sup> .
2024	Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems 10th International Conference on Computational Social Science (IC2S2), Philadelphia, PA, July 18 <sup>th</sup> -20 <sup>th</sup> .
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 20 <sup>th</sup> -24 <sup>th</sup> .
2024	Comparing Social Learning Strategies in Collective Search: Simulation and Empirical Evidence in Technology and Culture Data, 16th Annual INAS Conference, Germany,

May 30<sup>th</sup>-31<sup>st</sup>.

- 2023 Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems, 118th ASA Annual Meeting, Philadelphia, PA, August 17<sup>th</sup>-21<sup>st</sup>.
- 2023 Hyperbolic Embedding as a Machine Learning Representation for Knowledge Systems, 2nd International Conference on Science of Science and Innovation (ICSSI), Chicago, IL, June 26<sup>th</sup>-29<sup>th</sup>.
- 2023 The Geometry of Perspective: Predicting Personal Innovation with Dynamic Models of Subjectivity, 118th ASA Annual Meeting, Philadelphia, PA, August 17<sup>th</sup>-21<sup>st</sup>.
- 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 17<sup>th</sup>-20<sup>th</sup>.
- 2023 Modularity, Higher-Order Invention and New Venture Success, 83rd AOM Annual Meeting, Boston, MA, August 4<sup>th</sup>-8<sup>th</sup>.
- 2022 Modularity, Higher-Order Invention and New Venture Success, 1st International Conference on Science of Science and Innovation (ICSSI), Washington, DC, June 7<sup>th</sup>-9<sup>th</sup>.
- 2022 Modularity, Higher-Order Invention and New Venture Success, 8th International Conference on Computational Social Science (IC2S2), Chicago, IL, July 19<sup>th</sup>-22<sup>nd</sup>.
- 2021 Modularity, Higher-Order Invention and New Venture Success, 116th ASA Annual Meeting, Virtual, August 6<sup>th</sup>-10<sup>th</sup>.
- 2021 Modularity, Higher-Order Invention and New Venture Success, 7th International Conference on Computational Social Science, Virtual, July 27<sup>th</sup>-31<sup>st</sup>.
- 2018 Choice of Co-investment Partners of Chinese Venture Capital Firms, ICSA Annual Conference, Princeton, NJ, August 10<sup>th</sup>.

## **INVITED TALKS**

- 2026 From Elite to Mass Science: How Expanding Scholarly Families Reshape Academic Stratification, Northwestern University, Quantitative and Computational Methods Workshop, Feb.
- 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**

### **Purdue University**

An Adventure in a Brave New World: Technology, Society, and Ethics (Spring 2026)

### **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

## **REFERENCES**

References available upon request.