HANCHENG CAO

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EDUCATION

Stanford University — Stanford, CA
Ph.D. in Computer Science, minor in Management Science & Engineering — Sep 2018 – Jun 2024 (Expected)

- Research Interest: computational social science, future of work
- Committee: Prof. Dan McFarland, Prof. Michael Bernstein, Prof. Dan Jurafsky
- Stanford Interdisciplinary Graduate Fellow

Tsinghua University — Beijing, China
B.Eng. in Electronic Engineering (with honors) — Aug 2014 – Jun 2018

- Selected to Spark Scientific and Technological Innovation Fellowship (top 1.5% of 3560 Tsinghua students for outstanding research performance)

University of Maryland, College Park — College Park, MD, USA
Exchange Student — Aug 2016 – Dec 2016

- Research Assistant to Prof. Hanan Samet, University Distinguished Professor

Massachusetts Institute of Technology — Cambridge, MA, USA
Visiting Student at MIT Media Lab, Human Dynamics Group — Jun 2017 – Sep 2017

- Research Assistant to Prof. Alex 'Sandy' Pentland and Prof. Xiaowen Dong

PROFESSIONAL EXPERIENCE

Allen Institute for Artificial Intelligence — Seattle, WA, USA
Research Intern, Semantic Scholar/AllenNLP team — Jun 2022 – Dec 2022
Mentors: Lucy Lu Wang, Kyle Lo, Jesse Dodge

Microsoft — Redmond, WA, USA
Research Intern, E & D Office of Applied Research & Microsoft Research — Mar 2022 – Jun 2022
Mentors: Longqi Yang, Mengting Wan

Microsoft — New York City, NY, USA
Research Intern, Computational Social Science Group, Microsoft Research — Jun 2021 – Sep 2021
Mentors: Jake Hofman, Dan Goldstein

Microsoft — Redmond, WA, USA
Research Intern, E & D Office of Applied Research & Microsoft Research — Jun 2020 – Sep 2020
Mentors: Longqi Yang, Chia-Jung Lee, Jaime Teevan, Brent Hecht, Shamsi Iqbal, Mary Czerwinski

Tencent Inc. — Beijing, China
Research Intern, Tencent Map Service, Mobile Internet Group — July 2018 – Sep 2018

PUBLICATIONS

1. M. Cheng, D. Smith, X. Ren, **H. Cao**, S. Smith, D. McFarland. How New Ideas Diffuse in Science. In **American Sociological Review (ASR)**. [pdf]
2. **H. Cao**, Y. Lu, Y. Deng, D. McFarland, M. Bernstein. Breaking out of the Ivory Tower: A Large-scale Analysis of Patent Citations to HCI Research. In ACM CHI Conference on Human Factors in Computing Systems (CHI 2023). Full paper. **Best Paper Award** [pdf]
3. M. Lee, M. Srivastava, A. Hardy, E. Durmus, A. Paranjape, J. Thickstun, I. Gerard-Ursin, F. Ladhak, F. Rong, R. Wang, L. Li, M. Kwon, J. Park, **H. Cao**, T. Lee, R. Bommasani, M. Bernstein, P. Liang. Evaluating the Interactability of Language Models. In Transactions on Machine learning Research (TMLR). [pdf]
4. Z. Chen, J. Piao, X. Lan, **H. Cao**, C. Gao, Z. Lu, Y. Li, Practitioners Versus Users: A Value-Sensitive Evaluation of Current Industrial Recommender System Design. . In 2022 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2022). Full paper. [pdf]

5. Z. Chen*, **H. Cao***, X. Lan, Z. Lu, Y. Li, Beyond Virtual Bazaar: How Social Commerce Promotes Inclusivity for the Traditionally Underserved Community in Chinese Developing Regions. In ACM CHI Conference on Human Factors in Computing Systems (CHI 2022). Full paper. [pdf]
6. **H. Cao**, C. Lee, S, Iqbal, M. Czerwinski, P. Wong, S. Rintel, B. Hecht, J. Teevan, L. Yang, Large Scale Analysis of Multitasking Behavior During Remote Meetings. In ACM CHI Conference on Human Factors in Computing Systems (CHI 2021). Full paper. **Best Paper Honorable Mention Award** [pdf]
7. **H. Cao***, Z. Chen*, Y. Deng, X. Gao, J. Piao, F. Xu, Y. Zhang, Y. Li, Learning from Home: A Mixed-Methods Analysis of Live Streaming Based Remote Education Experience in Chine Colleges during the COVID-19 Pandemic. In ACM CHI Conference on Human Factors in Computing Systems (CHI 2021). Full paper. [pdf]
8. **H. Cao***, Z. Chen*, M. Cheng, S. Zhao, T. Wang, Y. Li. You Recommend, I Buy: How and Why People Engage in Instant Messaging Based Social Commerce. In 2021 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2021). Full paper. [pdf]
9. G. Zhang*, Y. Li*, Y. Yuan*, F. Xu, **H. Cao**, L. Zhou, D. Jin. Community Value Prediction in Social E-Commerce. In 2021 ACM Web Conference (WWW 2021). Long paper. [pdf]
10. Y. Yuan, F. Xu, **H. Cao**, G. Zhang, Y. Li, D. Jin. Persuade to Click: Modeling Context-aware Persuasion in online Product Recommendation Text. In IEEE Transactions on Knowledge and Data Engineering. [pdf]
11. Y. Fan, Z. Tu, T. Li, **H. Cao**, T. Xia, Y. Li, X. Chen, L. Zhang, Understanding the Long-term Dynamics of Mobile App Usage Context via Graph Embedding, in IEEE Transactions on Knowledge and Data Engineering (TKDE). [pdf]
12. H. Wang, Y. Li, J. Lin, **H. Cao**, D. Jin. Context-Aware Semantic Annotation of Mobility Records. In ACM Transactions on Knowledge Discovery from Data (TKDD). [pdf]
13. **H. Cao**, V. Chen, V. Yang, Y. Lee, L. Stone, M. Whiting, M. Bernstein. My Teams Will Go On: Differentiating High and Low Viability Teams through Team Interaction. In 2020 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2020). Full paper. **Best Paper Honorable Mention Award**. [pdf]
14. Z. Chen, **H. Cao**, M. Cheng, F. Xu, T. Wang, Y. Li. Understanding the Role of Intermediaries in Online Social E-commerces: An Exploratory Study of Beidian. In 2020 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2020). Full paper. [pdf]
15. **H. Cao***, M. Cheng*, Z. Cen*, X. Ren, D. McFarland. Will This Idea Step Beyond Academia?: Understanding and Predicting Knowledge Transfer from Research to Practice. In 2020 Conference on Empirical Methods in Natural Language Processing Findings (EMNLP 2020 Findings). [pdf]
16. Z. Lin, S. Lyu, **H. Cao**, F. Xu, P. Hui, H. Samet, Y. Li. HealthWalks: Sensing Fine-grained Individual Health Condition via Mobility Data. In 2021 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2021). Full paper. [pdf]
17. Z. Chen, **H. Cao**, H. Wang, F. Xu, Y. Li, V. Kostakos. Will You Come Back?: Understanding Characteristics Leading to Urban Revisitation. In 2020 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2020). Full paper. [pdf]
18. **H. Cao***, Z. Chen*, F. Xu, Y. Li, T. Wang. When Your Friends Become Sellers: An Empirical Study of Social Commerce Site Beidian. In the 14th International AAAI Conference on Web and Social Media (ICWSM 2020). Full paper. [pdf]
19. T. Li, M. Zhang, **H. Cao**, Y. Li, S. Tarkoma, P. Hui. "What Apps Did You Use?": Understanding the Long-term Evolution of Mobile App Usage. In 2020 ACM Web Conference (WWW 2020). Long paper. [pdf]
20. T. Zhen, **H. Cao**, E. Lagerspetz, H. Flores, S. Tarkoma, P. Nurmi, Y. Li. Exploring and Understanding User Long-term App Usage Dynamics with Socioeconomic Attributes. In Springer Transactions on Pervasive Computing and Interaction (TPCI). [pdf]
21. **H. Cao**, Z. Chen, F. Xu, Y. Li, V. Kostakos. Revisitation in Urban Space vs. Online: A Comparison across POIs, websites, and Smartphone Apps. In 2019 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2019). Full paper. [pdf]
22. **H. Cao**, J. Feng, Y. Li, V. Kostakos. Uniqueness in the City: Urban Morphology and Location Privacy. In 2018 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2018). Full paper. [pdf]
23. **H. Cao**, F. Xu, J. Sankaranarayanan, Y. Li, H. Samet. Habit2vec: Trajectory Semantic Embedding for Living Pattern Recognition in Population. In IEEE Transactions on Mobile Computing (TMC). [pdf]
24. **H. Cao**, J. Sankaranarayanan, J. Feng, Y. Li, H. Samet. Understanding Metropolitan Crowd Mobility via Mobile Cellular Accessing Data. In ACM Transactions on Spatial Algorithms and Systems (TSAS). [pdf]
25. M. Zeng, **H. Cao**, M. Chen, Y. Li. User Behavior Modeling, Recommendations, and Purchase Prediction during Online Shopping Festivals. In Springer Electronic Markets (EM). [pdf]
26. H. Shi, **H. Cao**, X. Zhou, Y. Li, V. Kostakos, F. Sun, F. Meng, C. Zhang. Semantics-Aware Hidden Markov Model for Human Mobility. In 2019 SIAM International Conference on Data Mining (SDM 2019). Long paper. [pdf]
27. H. Shi, Y. Li, **H. Cao**, X. Zhou, V. Kostakos, C. Zhang. Semantics-Aware Hidden Markov Model for Human Mobility. In IEEE Transactions on Knowledge and Data Engineering (TKDE). Extended version of SDM 2019 paper. [pdf]

28. F. Xu, T. Xia, **H. Cao**, Y. Li, F. Sun, F. Meng. Detecting Popular Temporal Modes in Population-scale Unlabelled Trajectory Data. In 2018 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2018). Full paper. [pdf]

WORKING PAPERS (MANUSCRIPTS AVAILABLE)

29. **H. Cao**, J. Dodge, K. Lo, D. McFarland, L. Wang. The Rise of Open Science: Tracking the Evolution and Perceived Value of Data and Methods Link-Sharing Practices. **Poster award, Stanford Data Science Conference**
30. W. Liang*, Y. Zhang*, **H.Cao***, B. Wang, D. Ding, V. Kailas, Y. Yin, D. McFarland, J. Zou. Can large language models (LLM) provide useful feedback on research papers?
31. J. Li, H. Cao, L. Lin, Y. Hou, A. Ali. User Experience Design Professionals' Perceptions of Generative AI.
32. **H. Cao**, S. Spatharioti, D. Goldstein, J. Hofman. Comparing scalable strategies for generating numerical analogies.

* Indicates equal contribution.

TEACHING EXPERIENCE

- Course Assistant (CA), CS124: From Languages to Information, taught by Prof. Dan Jurafsky, Winter 2019-2020.
- Course Assistant (CA), CS221: Artificial Intelligence: Principles and Techniques, taught by Prof. Percy Liang & Prof. Dorsa Sadigh, Fall 2019-2020.

SELECTED AWARDS AND HONORS

- Stanford Data Science Conference Poster Award, 2023
- HCOMP Travel Grant, 2023
- ICSSI Travel Grant, 2023
- ACM CHI 2023 Best Paper Award, 2023
- Stanford Interdisciplinary Graduate Fellow, 3 year full tuition + stipend coverage ($160,000), 1 of 33 graduate student awardees, university-wide, in cohort
- IC2S2 student scholarship, 2022
- Stanford Department of Music Awards – Friends of Music Graduate Prizes, 2022
- Stanford Friends of Music Scholarship (Harpsichord), 2021
- THINC fellowship, 2021
- ACM CHI 2021 Best Paper Honorable Mention Award, 2021
- ACM CSCW 2020 Best Paper Honorable Mention Award, 2020
- Stanford HAI-AWS Cloud credit award ($3000), 2020
- SIGCHI Student Travel Grant, 2019
- The James D. Plummer Graduate Fellowship – a School of Engineering (SoE) Fellowship ($50,000), Stanford University, 2018
- UbiComp Student Travel Grant, 2018
- Beijing Outstanding Graduate Award, 2018 (Highest honor for graduate set by the government of Beijing)
- Outstanding Graduate Award, Tsinghua University, 2018
- China National Scholarship, 2017 (Highest level of scholarship set by the government of China)
- Qualcomm Scholarship, 2017 (Awarded to top 33 of 2562 applicants with excellent scientific potential)
- Zhang Mingwei Scholarship, 2016 (Awarded to students for outstanding academic performance)
- Changhong Scholarship, 2015 (Awarded to students for outstanding academic performance)
- Philobiblion Scholarship, 2016 (0.5% of 1000 applicants)
- Tsinghua Comprehensive Excellence Award, 2015–17
- Tsinghua Research Excellence Award, 2015–17
- Tsinghua Academic Excellence Award, 2015–17

PRESENTATIONS

- The Rise of Open Science: Tracking the Evolution and Perceived Value of Data and Methods Link-Sharing Practices, *ICSSI 2023*
- The Rise of Open Science: Tracking the Evolution and Perceived Value of Data and Methods Link-Sharing Practice, *Stanford Data Science Conference*

- Breaking out of the Ivory Tower: A Large-scale Analysis of Patent Citations to HCI Research, *ICSSI 2023*
- Breaking out of the Ivory Tower: A Large-scale Analysis of Patent Citations to HCI Research, *CHI 2023*
- Breaking out of the Ivory Tower: A Large-scale Analysis of Patent Citations to HCI Research, *Stanford University*, Mar 2023
- Understanding AI Knowledge Transfer from Research to Practice, IC2S2 2022
- Predicting and Understanding Team Outcomes Through Digital Trace Data, *IC2S2 2022*
- Beyond Virtual Bazaar: How Social Commerce Promotes Inclusivity for the Traditionally Underserved Community in Chinese Developing Regions, *CHI 2022*
- Large Scale Analysis of Multitasking Behavior During Remote Meetings, *University of Minnesota*, Mar 2022
- Leveraging Digital Trace to Understand Remote Collaboration Dynamics. *Seminar on Social Presence in Virtual Event Space*, Mar 2022.
- A Computational Approach to Understand Micro Dynamics of Remote Collaboration, *Dropbox*, Nov 2021
- A Computational Approach to Understand Micro Dynamics of Remote Collaboration, *Microsoft*, Nov 2021
- You Recommend, I Buy: How and Why People Engage in Instant Messaging Based Social Commerce, *CSCW 2021*
- My Teams Will Go On: Differentiating High and Low Viability Teams through Team Interaction, *AI Pioneer Conference (Chinese)*, Aug 2021
- My Teams Will Go On: Differentiating High and Low Viability Teams through Team Interaction, *THINC Sminar*, Aug 2021
- Large Scale Analysis of Multitasking Behavior During Remote Meetings, *Tsinghua Boston Alumni Association*, Aug 2021
- My Teams Will Go On: Differentiating High and Low Viability Teams through Team Interaction, *University of Washington DUB*, July 2021
- My Teams Will Go On: Differentiating High and Low Viability Teams through Team Interaction, *IC2S2 2021*
- Large Scale Analysis of Multitasking Behavior During Remote Meetings, *IC2S2 2021*
- Large Scale Analysis of Multitasking Behavior During Remote Meetings, *CHI 2021*
- Will This Idea Step Beyond Academia?: Understanding and Predicting Knowledge Transfer from Research to Practice, *Networks 2021*
- Mining Human Mobility Patterns and Urban Dynamics through Spatial Temporal Big Data, *University of Tokyo*, Feb 2021
- Will This Idea Step Beyond Academia?: Understanding and Predicting Knowledge Transfer from Research to Practice, *EMNLP 2020 SDP Workshop*
- My Teams Will Go On: Differentiating High and Low Viability Teams through Team Interaction, *CSCW 2020*
- Rediscovering Aristotle: Are we creating new science or repackaging old science?, *ASA Annual Meeting 2020*
- Modeling the Diffusion of Novel Ideas: The Variable Careers of New Scientific Concepts, *ASA Annual Meeting 2020*
- Will This Idea Step Beyond Academia?: Understanding and Predicting Knowledge Transfer from Research to Practice, *IC2S2 2020*
- When Your Friends Become Sellers: An Empirical Study of Social Commerce Site Beidian, *ICWSM 2020*
- Mining Human Mobility Patterns and Urban Dynamics through Spatial Temporal Big Data, *University of Warwick*, Sep 2019
- Mining Human Mobility Patterns and Urban Dynamics through Spatial Temporal Big Data, *Wayve.ai*, Sep 2019
- Revisitation in Urban Space vs. Online: A Comparison across POIs, websites, and Smartphone Apps, *UbiComp 2019*
- Uniqueness in the City: Urban Morphology and Location Privacy, *UbiComp 2018*

ACADEMIC SERVICES

- **Program Committee Member:** AAAI 2021/2022/2023, AAAI ICWSM 2020/2021/2022/2023
- **Associate Chair:** CHI LBW 2022/2023
- **Reviewer:** PLOS ONE, Nature Scientific Data, CHI, CSCW, UbiComp, MobileHCI, IMC, ICWSM, TMC, Journal of Retailing and Consumer Services
- **Facilitator:** Microsoft New Future of Work 2020 Symposium
- **Session Chair:** UbiComp 2019 CPD workshop
- **Student Volunteer:** CSCW 2020, UbiComp/ISWC 2018

SELECTED MEDIA COVERAGE

- WIRED, May 2021, It's True. Everyone Is Multitasking in Video Meetings.
- TED WorkLife podcast with Adam Grant, Apr 2022, Rethinking Flexibility at Work.
- Forbes, Apr 2021, Turn Your Camera On! Deep Vs. Shallow Learning In A Virtual World
- Forbes, Jul 2021, Why You Shouldn't Multitask And What You Can Do Instead
- Slack blog, Feb 2023, Sharpen your focus by identifying bad habits
- Microsoft blog, May 2021, Making remote and hybrid meetings work in the new future of work
- L'usine Nouvelle, Aug 2021, Le blog des experts des neurosciences Mode multitâche et visioconférence : les pratiques à adopter et à éviter
- Frankfurter Allgemeine Zeitung, Nov 2021, Keine Zeit für Multitasking
- Business Daily, Sep 2021, Steps to boost your productivity during virtual get-togethers
- 量子位,May 2021@老板：别开视频会议了，效率低没人 care，斯坦福、微软都可以作证
- 新智元, May 2022 清华、斯坦福、哈佛揭秘：为何沉迷拼多多「砍一刀」