LIN CHEN

Northeastern University
Email: lchencu@connect.ust.hk

RESEARCH INTERESTS

Data Science, Computational Social Science, Urban Segregation, Urban Inequality, LLM Agent

EDUCATION

The Hong Kong University of Science and Technology *Sept. 2020 - July 2025*
Ph.D. in Department of Computer Science and Engineering
Advisor: Prof. Pan Hui

Tongji University *Sept. 2016 - Jul. 2020*
B.S. in Department of Electronics and Information Engineering
Summa cum laude (GPA: 4.86/5)

RESEARCH EXPERIENCE

Northeastern University *Sept. 2025 -*
Postdoctoral Researcher @ SUNLab
Advisor: Prof. Esteban Moro

The Hong Kong University of Science and Technology *Sept. 2020 - July 2025*
Research Assistant @ SyMLab
Advisor: Prof. Pan Hui

Tsinghua University *Apr. 2023 - Dec. 2023*
Visiting Researcher @ Future Intelligence LaB (FIB)
Advisor: Prof. Yong Li

University of Chicago *Dec. 2022 - Apr. 2023*
Visiting Researcher @ Knowledge Lab
Advisor: Prof. James Evans

SELECTED AWARDS

Hong Kong PhD Fellowship (HKPFS) *2020-2024*

KDD Student Travel Award *2024*

HKUST Conference Travel Grant *2024*

Rising Stars Women in Engineering, Asian Deans' Forum *2023*

ICWSM Student Travel Grant *2023*

HKUST Overseas Research Award *2022*

HKUST RedBird PhD Award *2020*

Shanghai Outstanding Bachelor Graduate *2020*

Outstanding Student of Tongji University *2019*

National Undergraduate Scholarship *2017, 2018, 2019*

WORKING PAPERS

[4] Fengli Xu, Chenyang Shao, **Lin Chen**, Qingbin Zeng, Zhilong Chen, Mr Nicholas Sukiennik, Jingyi Wang, Chen Gao, Huandong Wang, Jianxun Lian, Xing Xie, Yong Li, and James Evans. Large Language Models for Computational Social Science: A Survey. Under review in *Nature Human Behaviour*.

[3] **Lin Chen**, Fengli Xu, Esteban Moro, Pan Hui, Yong Li, and James Evans. Urban mobility network centrality predicts social resilience. Under review in *Nature Computational Science*.

[2] **Lin Chen**, Yunke Zhang, Jie Feng, Haoye Chai, Honglin Zhang, Bingbing Fan, Yibo Ma, Shiyuan Zhang, Nian Li, Tianhui Liu, Nicholas Sukiennik, Keyu Zhao, Yu Li, Ziyi Liu, Fengli Xu, and Yong Li. AI Agent Behavioral Science. Under review in *HSSCOMMS*.

[1] Bingbing Fan*, **Lin Chen***, Songwei Li, Jian Yuan, Fengli Xu, Pan Hui, and Yong Li. Invisible Walls in Cities: Revealing Segregation Experience in Social Media Content with Large Language Model. Under review in *AAAI'26*.

PUBLICATIONS (NEW TO OLD)

[10] Fengli Xu, Qi Wang, Esteban Moro, **Lin Chen**, Arianna Salazar Miranda, Marta C. Gonzalez, Michele Tizzoni, Chaoming Song, Carlo Ratti, Luis Bettencourt, Yong Li, and James Evans. Using human mobility data to quantify experienced urban inequalities. *Nature Human Behaviour*: 1-11. (2025)

[9] **Lin Chen**, Fengli Xu, Nian Li, Zhenyu Han, Meng Wang, Yong Li, and Pan Hui. Large Language Model-driven Meta-structure Discovery in Heterogeneous Information Network. *Proceedings of the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, pp. 307-318. (2024) (Acceptance rate: ∼20%)

[8] **Lin Chen**, Yong Li, and Pan Hui. VulnerabilityMap: An Open Framework for Mapping Vulnerability among Urban Disadvantaged Populations in the United States. *Proceedings of the Thirty-Third International Joint Conference on Artificial Intelligence (IJCAI)* AI for Good. Pages 7206-7214. (2024) (Acceptance rate: 25.8%)

[7] Yunke Zhang, Fengli Xu, **Lin Chen**, Yuan Yuan, James Evans, Luis Bettencourt, and Yong Li. Counterfactual Mobility Network Embedding Reveals Prevalent Accessibility Gaps in U.S. Cities. *Humanities and Social Sciences Communications*, 11, 87. (2024)

[6] Zhenyu Han, **Lin Chen**, Qianyue Hao, Qiwei He, Katherine Budeski, Depeng Jin, Fengli Xu, Kun Tang, and Yong Li. How enlightened self-interest guided global vaccine sharing benefits all: a modeling study. *Journal of Global Health*, 13. (2023)

[5] **Lin Chen**, Qianyue Hao, Fengli Xu, Yong Li, and Pan Hui. Getting Back on Track: Understanding COVID-19 Impact on Urban Mobility and Segregation with Location Service Data. *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM)*, 17(1), 126-136. (2023) (Acceptance rate: ∼20%)

[4] Qianyue Hao, Fengli Xu, **Lin Chen**, Pan Hui, and Yong Li. Hierarchical Multi-agent Model for Reinforced Medical Resource Allocation with Imperfect Information. *ACM Transactions on Intelligent Systems and Technology (TIST)*, Volume 14, Issue 1, pp 1–27. (2022)

[3] **Lin Chen***, Fengli Xu*, Zhenyu Han, Kun Tang, Pan Hui, James Evans, and Yong Li. Strategic COVID-19 vaccine distribution can simultaneously elevate social utility and equity. *Nature Human Behaviour* (IF=24.252), Volume 6, Issue 11, pp 1503–1514. (2022)

[2] Qianyue Hao, Fengli Xu, **Lin Chen**, Pan Hui, and Yong Li. Hierarchical Reinforcement Learning for Scarce Medical Resource Allocation with Imperfect Information. *Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (KDD), pp. 2955-2963.* (2021)

[1] Qianyue Hao*, **Lin Chen***, Fengli Xu, and Yong Li. Understanding the Urban Pandemic Spreading of COVID-19 with Real World Mobility Data. *Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD), pp. 3485-3492.* (2020)

Note: * indicates equal contribution.

TEACHING EXPERIENCE

COMP 4641: Social Information Network Analysis and Engineering @HKUST *Spring 2021*
Teaching Assistant; Instructor: Prof. Pan Hui

COMP 4021: Internet Computing @HKUST *Fall 2021*
Teaching Assistant; Instructor: Prof. Dik-Lun Lee

STUDENT MENTORSHIP

Ziyi Liu, PhD student at Tsinghua University
Wenxuan Zhou, Master student at Tsinghua University
Bingbing Fan, Master student at Tsinghua University
Songwei Li, Undergraduate student at Tsinghua University

ACADEMIC SERVICE

Program Committee: TheWebConf (24), IJCAI (25)
Conference Reviewer: ASONAM (20), TNSE (20), TheWebConf (22-25), IC2S2 (22-25), IMWUT (22), WSDM (23), ICWSM (24-25), IJCAI (25)
Journal Reviewer: Journal of Social Computing (JSC), Social Network Analysis and Mining

TALKS AND POSTERS

[Sept 2025, Siena] Behavioral AI for understanding and improving urban life. Invited talk @ UrbanSys, Conference on Complex Systems (CCS'25).

[Aug 2025, Bali] Urban mobility network centrality predicts social resilience. Poster @ the third Conference on Urban Science and Intelligence.

[Aug 2024, Barcelona] "Large language model-driven meta-structure discovery in heterogeneous information network", Oral & Poster @ the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD'24).

[Aug 2024, Beijing] "Mobility network centrality explains urban social resilience during crises", Poster & Pitch @ the Second Research Summit for Urban Science (RSUS'24).

[Aug 2024, Jeju] "VulnerabilityMap: An Open Framework for Mapping Vulnerability among Urban Disadvantaged Populations in the United States", Oral & Poster @ the Thirty-Third International Joint Conference on Artificial Intelligence (IJCAI'24).

[Nov 2023, Tokyo] "UrbanLens: Computational Understanding of Urban Lifestyles", Poster & Pitch @ Rising Stars Women in Engineering Workshop, Asian Deans' Forum (ADF-RSE'23).

[Sept 2023, Beijing] "Strategic COVID-19 vaccine distribution can simultaneously elevate social utility and equity", Poster @ the 3rd International Forum on Big Data for Sustainable Development Goals (FBAS'23).

[Aug 2023, Beijing] "Strategic COVID-19 vaccine distribution can simultaneously elevate social utility and equity", Poster & Pitch @ the First Research Summit for Urban Science (RSUS'23).

[Jun 2023, Limassol] "Getting Back on Track: Understanding COVID-19 Impact on Urban Mobility and Segregation with Location Service Data", Oral @ the International AAAI Conference on Web and Social Media (ICWSM'23).

[Jan 2023, Chicago], "Complex Network Analysis Reveals Universal Mobility Response to Health Crisis", Talk @ Knowledge Lab Seminar.

[Apr 2022, Beijing (remote)] "Review on leveraging human mobility data for urban epidemic modeling", Talk @ Future Intelligence Lab, Tsinghua University.

[Jan 2021, Hong Kong] "COVID-19 Vaccine Distribution: Efficiency and Equity", Talk @ Fudan-Helsinki-HKUST Webinar.

LANGUAGE

Chinese (native, both Putonghua and Teochew), **English** (proficient), **Korean** (beginner)