

HSIU-CHI LU

PhD Student, Northeastern University, Boston, USA
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Research Interests

Computational Social Science, Polarization, Disinformation, Social Network, Media Dynamic, Complex Systems

Education

Northeastern University, Network Science Institute, Boston, USA	Sep. 2025 –
Doctor of Philosophy in Network Science	
Advisor: David Lazer	
National Chengchi University, Taipei, Taiwan	Aug. 2022 – Aug. 2024
Master of Science in Sociology	
Advisor: Hsuan-Wei Lee, Jen-Hao Chen	
Thesis: <i>Agents of Discord: Modeling the Impact of Social Bots on Opinion Polarization in Complex Networks</i>	
National Chengchi University, Taipei, Taiwan	Aug. 2018 – Jul. 2022
Bachelor of Science in Sociology	
Minor in Applied Mathematics	

Research Papers

Journal Publication

- **Hsiu-Chi Lu** & Hsuan-Wei Lee (2024). “Agents of Discord: Modeling the Impact of Political Bots on Opinion Polarization in Social Networks.” *Social Science Computer Review*. Advance online publication. [Link](#).
*Also presented at **Sunbelt 2024**, International Network for Social Network Analysis (INSNA), Edinburgh, Scotland, United Kingdom Jun. 24-30, 2024. Presented orally.

Under Review and Conference Papers

- **Hsiu-Chi Lu** & Hsuan-Wei Lee (2024). “Modeling Disinformation Resilience: How Social Pressure and Network Dynamics Drive and Sustain the Spread of False Narratives.” **IC2S2 2024**, 10th International Conference on Computational Social Science, Philadelphia, Pennsylvania, United States, Jul. 17–20, 2024. Presented as a poster; full paper available at [Link](#).
*Currently under review in *Humanities & Social Sciences Communications*.
- **Hsiu-Chi Lu** & Jen-Hao Chen (2024) (equal contribution). “A Journey of Inclusiveness: Mapping Emotions and Phrases for LGBTQ in Major Taiwanese News Outlets over the Past Decade.” **IC2S2 2024**, 10th International Conference on Computational Social Science, Philadelphia, Pennsylvania, United States, Jul. 17–20, 2024. Poster presentation; full paper available at [Link](#).
*In preparation for submission.
- **Hsiu-Chi Lu** (2021). “Analysis and Reflection on the Relationship and Actions Between AI and Humans in the Information Age: A Case Study of GPT-3 and its Creations.” **2021 Annual Meeting**, Taiwanese Sociological Association, Taipei, Taiwan, Nov. 27-28, 2021 (written in Mandarin). Presented orally; full paper available at [Link](#).

Academic Experience

Research Assistant Aug. 2024 – Present
College of Health, Lehigh University Bethlehem, PA, U.S.A.

- Developed a model to investigate disinformation spread in online social networks, focusing on mechanisms that lead to widespread dissemination; resulting in a paper currently under review.
- Implemented mathematical functions to model experiential data on disinformation, identifying and defining underlying dissemination patterns.

Research Assistant Feb. 2022 – Present
Department of Sociology, National Chengchi University Taipei, Taiwan

- Conducted independent and collaborative research on LGBTQ representation in major Taiwanese news outlets during the 2010s, resulting in a conference presentation and a paper currently under review.
- Developed a structured database of approximately 20,000 records by utilizing Python-based web crawling to collect over 50,000 news articles from major Taiwanese media outlets. Employed natural language processing, machine learning, and large language models to filter and classify data.
- Applied statistical methods to analyze patterns between sexual orientation and external factors, investigating societal inclusiveness and enhancing clarity through data visualization.

- Analyzed night work patterns and their relationship with marital status among Taiwanese individuals, contributing insights to a work-life balance report; additionally, used Airstest to monitor mobile devices and gather data on college students' mental health.

Research Assistant

Institute of Sociology, Academia Sinica

Nov. 2022 – Jul. 2024

Taipei, Taiwan

- Conducted research on digital society issues such as misinformation, online polarization, and political bots, resulting in one published paper.
- Designed and visualized agent-based simulations in Python to examine the interaction between political bots, polarization, and the spread of disinformation.
- Analyzed network data to explore the role of network structure in opinion diffusion and disinformation dissemination.

Lab Intern

Institute of Information Science, Academia Sinica

Jul. 2023 – Dec. 2023

Taipei, Taiwan

Lab: Natural Language Processing and Sentiment Analysis Lab

- Supported the laboratory team in crafting a questionnaire for experiments on cognition of misinformation and processing demographic data from respondents.
- Contributed to interdisciplinary collaborations by integrating social science expertise into AI research endeavors.

Data Scientist

Big Data Group, Taiwan Institute of Governance and Communication Research

Feb. 2022 – Jun. 2023

Taipei, Taiwan

- Developed Python-based web-crawling scripts to gather social media data, creating three databases from Facebook and Ptt (a Taiwanese Reddit-like forum). The codes are available on [here](#), and the datasets can be requested via this [link](#).
- Structured and analyzed social media data using natural language processing and statistical methods to explore public opinion on the pandemic and the 2022 local elections in Taiwan.

Teaching Experience

Teaching Assistant

Sep. 2022 – Feb. 2023

National ChengChi University.

Course: **Data Analysis in Sociology**

- Prepared and conducted a one-hour discussion class on R and statistic each week.
- Supported over 70 students in group settings with their final papers, assisting them in discussing research questions, solving statistical problems, and providing programming support.

Awards and Grants

- **Master Dissertation Award.** Taiwanese Sociological Association 2024
- **Travel Grants.** 10th International Conference on Computational Social Science 2024
- **Outstanding Student Overseas Conference Grant.** Foundation for the Advancement of Outstanding Scholarship 2024
- **Subsidy for Students Attending International Conference.** Ministry of Science and Technology, Taiwan 2024
- **Undergraduate Research Project Scholarship.** Ministry of Science and Technology, Taiwan 2020
Research Topic: Analysis and Reflection on the Relationship and Actions Between AI and Humans in the Information Age: A Case Study of GPT-3 and its Creations
- **Presidential Award,** National ChengChi University 2019

Research Skills

- Social Network Analysis
- Web Crawling
- Machine Learning
- Natural Language Processing

- Quantitative and Qualitative Methods
- Agent-Based Simulation
- Data Processing and Visualization
- Programming: Python, R, Latex

Extracurricular Activities

Wild Fire Club (Member)

Political & Advocacy student club of National ChengChi University

2018 – 2019

- Encouraged youth to return to their hometowns to vote through campus events and speeches.
- Advocated for social issues such as transitional justice and marriage equality on social media.

Youth Anti-Fake News Movement (Member)

Inter-school student organization dedicated to combating disinformation.

2019

- Curated news content on media platforms and wrote descriptions to address the impact of disinformation originating from foreign countries.
- Participated in a press conference to raise public awareness of foreign disinformation.