

# HSIU-CHI LU

Master's Student, National Chengchi University, Taipei, Taiwan  
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## Research Interests

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

## Education

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National Chengchi University, Taipei, Taiwan

Aug. 2022 – Aug. 2024

Master of Science in **Sociology**

Advisor: Hsuan-Wei Lee, Jen-Hao Chen

Thesis: *Agents of Discord: Modeling the Impact of Social Bots on Opinion Polarization in Complex Networks*

National Chengchi University, Taipei, Taiwan

Aug. 2018 – Jul. 2022

Bachelor of Science in **Sociology**

Minor in **Applied Mathematics**

## Research Papers

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### 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 *Proceedings of the National Academy of Sciences (PNAS)*.

- **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 to *Social Forces*.

- **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

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### Research Assistant

College of Health, Lehigh University

Aug. 2024 – Present

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

Department of Sociology, National Chengchi University

Feb. 2022 – Present

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 Airtest 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

National ChengChi University.

Sep. 2022 – Feb. 2023

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.