HAOYANG LI 李昊阳

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EDUCATION

Hong Kong Baptist University Hong Kong SAR, China
B.S.S.C. (Hons.) in Sociology, Minor in Computer Science 2022−2026 *(Anticipated)*

- **Research Interest:** Large Language Model Agent, Complex System, Computational Social Science, Social Simulation, Social Stratification, Social Networks
- **GPA:** cGPA: 3.62/4.0, Major GPA: 3.69/4.0, Minor GPA: 3.72/4.0
  (First Class Hons.: cGPA 3.4 or above)
- **Relevant Coursework:** Intro to AI and ML (A-) | NLP and LLM (In Progress) | Social Stat. (A) | Intro to Python and its Applications (A-) | Problem Solving Using Object Oriented Approach (A) | Calc., Prob., and Stat. for CS (A-) | Fundamental of Data Analysis and Management (A-) | Sociological Classical Theory (A) | Sociological Theory II Contemporary Approaches (A-) | Social Networks (A-)

PUBLICATIONS

1. [Under Review] Qingbin Zeng, Ruotong Zhao, Jinzhu Mao, **Haoyang Li**, Fengli Xu$^{\boxtimes}$, & Yong Li. (2025). CrimeMind: Simulating urban crime with multi-modal LLM agents. *arXiv preprint arXiv:2506.05981*.

2. [Working Paper] **Haoyang Li**, Xiao Jia, & Zhanzhan Zhao$^{\boxtimes}$. (2025). The emergence of altruism in Large-Language-Model agents society. *arXiv preprint arXiv:2509.22537*.

3. [Working Paper] **Haoyang Li**, Songwei Li, Xiao Liu, Bill Shi, Fengli Xu$^{\boxtimes}$, & James Evans$^{\boxtimes}$. (2025). Dispersed knowledge, decentralized decisions: A labor market for multi-agent task allocation. *Poster presented at The 1st International Conference on AI Scientists (ICAIS 2025)*. [Poster]

4. [Working Paper] **Haoyang Li**, Runzhou Liu, Sen Pei, Amy Wesolowski, Hongru Du$^{\boxtimes}$. (2025). Theory-informed generative agents for modeling human mobility. [Slides]

RESEARCH EXPERIENCES

Research Intern | Future Intelligence Lab, **Tsinghua University** & Knowledge Lab, **University of Chicago** 2025.03 − Present

- Supervised by **Prof. Fengli Xu**, Assistant Professor, Department of Electronic Engineering, Tsinghua University
- Co-supervised by **Prof. James Evans**, Max Palevsky Professor, Director of Knowledge Lab, University of Chicago
- *Interdisciplinary LLM Agents Research*: Co-designed LLM Agents incorporating sociological theories to simulate and analyze human mobility, social segregation, crime patterns and market mechanisms, exploring underlying social behavior
- *In-depth Exploration of LLM Agents*: Investigated advanced technologies and design paradigms of LLM Agents, contributing to experimental work and co-authorship of resulting research papers

Research Intern | Dept. of Systems and Information Engineering, **University of Virginia** & Pei Group, **Columbia University** 2025.07 − Present

- Supervised by **Prof. Hongru Du**, Assistant Professor, Department of Systems and Information Engineering, University of Virginia
- Co-supervised by **Prof. Sen Pei**, Assistant Professor, Mailman School of Public Health, Columbia University
- *Interdisciplinary LLM Agents Research*: Explored integrating social science theory-driven LLM Agents into complex urban environments for social simulation, targeting applications in human mobility and public health
- Spearheaded the development of a physics-informed and sociological theory-guided LLM Agent framework for modeling urban human mobility, executing experiments, and drafting research manuscripts

RESEARCH EXPERIENCES

Research Assistant | School of Artificial Intelligence, **The Chinese University of Hong Kong, Shenzhen**   2025.07 − 2025.11

- Supervised by **Prof. Zhanzhan Zhao**, Joint Assistant Professor, School of Artificial Intelligence & Division of Computational Social Science, The Chinese University of Hong Kong, Shenzhen
- *Interdisciplinary LLM Agents Research*: Developed LLM-driven agent-based modeling frameworks focusing on human-like economic behaviors (e.g., cooperation, altruism) in LLMs' interactions. Led the design of agentic workflows, experimental implementation, and manuscript writing under the supervision

Research Assistant | Department of Sociology, **Hong Kong Baptist University**
2024.03 − 2024.06

- Supervised by **Prof. Jin Jiang**, Associate Professor, Department of Sociology, Hong Kong Baptist University
- *Project*: Staying in the Nest? A Study of Young Adults' Co-residence with Parents in the United Kingdom, Mainland China and Hong Kong
- *Quantitative Research*: Conducted quantitative analysis of survey on youth living arrangements, identifying key variables through literature synthesis and data organization
- Investigated socioeconomic drivers (economic resources, cultural values, life-course factors, etc.) shaping residential decision-making in young adults

SELECTED PROJECT

Term Paper on How Unequal in Social Capital Fuels Higher Education Opportunity Inequality in China
Course: SOCI 4035, *Instructor*: Prof. Jin Jiang, *Term*: 25 Spring   2025.3

- **Quantitatively investigated** stratifying effects of cultural capital (paternal education, leadership capital) on higher education access inequality, leveraging nationally representative **CFPS 2020 data** through **ordinal logistic regression modeling**
- **Proposed evidence-based policy interventions** targeting institutional barriers perpetuating educational disparities

AWARDS AND HONORS

- **President's Honor Roll**, Hong Kong Baptist University
Semester 1, 2022−2023; Semester 1&2, 2023−2024;
Semester 1&2, 2024−2025
- **Dean's List**, Hong Kong Baptist University   Semester 2, 2022−2023
- **HKSAR Government Talent Development Scholarship**, HK$10,000   2023.04

TALKS

- **Guest Lecture,** The Chinese University of Hong Kong, Shenzhen   2025.11
Topic: The Emergence of Altruism in LLM Society & Mobility Agents • **Venue:** AIE1901 AI Exploration I • [Slides]
- **Poster Presentation,** ICAIS 2025   2025.11
Title: Dispersed Knowledge, Decentralized Decisions: A Labor Market for Multi-Agent Task Allocation • **Venue:** The 1st International Conference on AI Scientists (ICAIS 2025), Beijing, China • [ICAIS Website] • [Poster]

TEACHING

- **Teaching Assistant,** Hong Kong Baptist University   2024.1-2024.4
Course: COMP1005 Essence of Computing • [Course Outline]

SKILLS

- **Languages:** Chinese Mandarin (Native), Chinese Cantonese (Listening), English (Working Language), LaTeX
- **Programming & Software:** `Python`, `Java`, `C`, `SQLite`, `MATLAB`, `Stata`, `SPSS`, `Microsoft Office`