

EDUCATION	<p>Hong Kong Baptist University Hong Kong SAR, China <i>B.S.S.C. (Hons.) in Sociology, Minor in Computer Science</i> 2022–2026 (<i>Anticipated</i>)</p> <ul style="list-style-type: none"> • Research Interest: Computational Social Science, Large Language Model Agent, Social Simulation, Social Stratification, Social Networks • GPA: cGPA: 3.62/4.0, Major GPA: 3.69/4.0, Minor GPA: 3.72/4.0 <i>(First Class Hons.: cGPA 3.4 or above)</i> • 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-)
PUBLICATION	<ol style="list-style-type: none"> 1. [Under Review] Zeng, Q., Zhao, R., Mao, J., <u>Li, H.</u>, Xu, F., & Li, Y. (2025). CrimeMind: Simulating urban crime with multi-modal LLM agents. <i>arXiv preprint arXiv:2506.05981</i>. <ul style="list-style-type: none"> • Collaborated with FIB-LAB@THU, under review by a top-tier AI conference • We proposed CrimeMind, a novel LLM-driven Agent-based modeling (ABM) framework for simulating urban crime within a multi-modal urban context • By applying theories from sociology and criminology into the agentic workflow of CrimeMind, the crime hotspot prediction and spatial distribution accuracy achieving up to a 24% improvement over the strongest baseline 2. [Working Paper] <u>Li, H.</u> & Jia, X. & Zhao, Z. (2025). The Emergence of Altruism in Large-Language-Model Agents Society. <i>arXiv preprint arXiv:2509.22537</i>. <ul style="list-style-type: none"> • First author, work supervised by Prof. Zhanzhan Zhao, expected to submit to a leading journal • Designed and implemented a large-scale social simulation framework (>200 agents) using a Schelling-variant model, creating a social dilemma between individual and collective utility to investigate altruism in LLM agents • First to empirically identify an intrinsic heterogeneity in LLMs' social tendencies via a mixed-methods analysis, discovering two distinct archetypes of LLMs. • Demonstrated that a social interaction mechanism significantly catalyzes pro-social behavior in LLMs, proposing that LLM selection for social simulation constitutes a choice of its underlying theoretical foundation
RESEARCH EXPERIENCES	<p>Research Intern Future Intelligence Lab, Tsinghua University 2025.03 – 2025.08</p> <ul style="list-style-type: none"> • Supervised by Prof. Fengli Xu, Assistant Professor, Department of Electronic Engineering, Tsinghua University • <i>Interdisciplinary LLM Agents Research:</i> Co-designed LLM Agents incorporating sociological theories to simulate and analyze human mobility, social segregation, and crime patterns, exploring underlying social behavior mechanisms • <i>In-depth Exploration of LLM Agents:</i> Investigated advanced technologies of and design thinking of LLM Agents, contributing to experimental work and co-authorship of a resulting research paper <p>Research Assistant School of Artificial Intelligence, CUHKSZ 2025.07 – Present</p> <ul style="list-style-type: none"> • Supervised by Prof. Zhanzhan Zhao, Joint Assistant Professor, School of Artificial Intelligence & Division of Computational Social Science, The Chinese University of Hong Kong, Shenzhen • <i>Interdisciplinary LLM Agents Research:</i> 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 EXPERIENCES

Research Intern | Dept. of Systems and Information Engineering, University of Virginia
2025.07 – Present

- Supervised by **Prof. Hongru Du**, Assistant Professor, Department of Systems and Information Engineering, University of Virginia
- *Interdisciplinary LLM Agents Research*: Explored integrating social science theory-driven LLM Agents into multimodal urban environments for social simulation, targeting applications in population mobility and public health
- Spearheaded efforts in developing physics formula-based and sociological theories-guided prompt engineering and the design of LLM Agentic workflows, executing experiments, and drafting research manuscripts

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

SKILLS AND INTERESTS

- **Languages**: Chinese Mandarin (Native), Chinese Cantonese (Listening), English (Working Language), \LaTeX
- **Programming & Software**: Python, Java, C, SQLite, MATLAB, Stata, SPSS, Microsoft Office
- **Interests**:
 - **Chinese Writing**: won the *First Prize* of the 24th National New Concept Writing Contest
 - **Hiking**: I am deeply impressed by the *MacLehose Trail* of Hong Kong