Jiayou Liang

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EDUCATION BACKGROUND

University of Chicago   **Chicago, IL**
- **Program:** MS in Applied Data Science   **GPA**: 4.0/4.0   Expected 12/2025

Beijing Normal – Hong Kong Baptist University   **Zhuhai, China**
- **Degree**: BS in Financial Mathematics, First Class Honours   **GPA**: 3.77/4.0   09/2020–06/2024
- **Honors and Awards:**   First Class Award (12/2021, 12/2022, 12/2023), President's Honor Roll (every semester)

RESEARCH EXPERIENCE

Accelerating Adaptive Algorithms At Scale through Reparameterization | Research Assistant   4/2025 – Present
The University of Chicago | Supervisor: Prof. Rebecca Willett   Illinois, United States
- **Implemented scalable approximations of EGOP**: built low-rank estimation and periodic reparameterization modules based on *auxiliary EGOP* and *randomized SVD*, enabling faster convergence of Adam/Adagrad in large-scale model training without significant computational overhead.
- **Conducted hyperparameter search and ablation studies** on **Fashion-MNIST, TinyMNIST, EMNIST (Letters/Digits) and CIFAR10**, comparing models with/without reparameterization, different optimizers, and learning-rate schedules; reported convergence speed, validation accuracy, memory footprint, and runtime to ensure reproducibility of results.

Deep Assortment Optimization | Research Intern   4/2025 – Present
The University of Texas at Austin | Supervisor: Prof. Rui Gao   Remote
- Replicated constrained and unconstrained variants of the basic attraction, nested logit, and mixed logit models; developed an SFESS-driven (Score Function Estimators for k-Subset Sampling) neural network as the baseline for product selection.

Foundation Model Fine-tuning for Breast Cancer Biomarker Prediction| Data Scientist   4/2025 – Present
The University of Chicago | Supervisor: Prof. Utku Pamuksuz   Illinois, United States
- Adapting Direct Preference Optimization from natural language processing to computational pathology through self-supervised preference construction, enabling parameter-efficient fine-tuning of the TITAN foundation model for improved breast cancer biomarker prediction from whole slide images.

PROJECT EXPERIENCE

AI-Assisted Clinical Data Navigation Platform | Data Scientist | St. Jude Children's Research Hospital
- We built an LLM agentic chat interface that lets researchers explore the Childhood Cancer Survivor Study (CCSS) via natural-language questions, automatically translating them to SQL and returning instant summary stats and visualizations across 15k+ de-identified variables and two cohorts (survivors, siblings). Deployed a secure PostgreSQL backend with controlled access, and wired it to LangChain agents, and Azure Cognitive Search to accelerate pre-proposal exploration and variable discovery.

RESEARCH PAPER

Analyst Reports and Stock Performance: Evidence from the Chinese Market
- **Published by:** Asia-Pacific Financial Markets | https://doi.org/10.1007/s10690-025-09522-w

INTERNSHIP EXPERIENCE

Exion Asia (HuiZhou) Co., Ltd, Assistant for Marketing and Sales Analysis   **06/2023-08/2023**
- **Sales trend analysis**: Decomposed sales and revenue trends by region, industry, and product line, identifying seasonal patterns and promotional effects; created weekly/monthly reports and executive summaries to pinpoint growth and decline drivers.
- **Visualization and automation**: Built multi-dimensional dashboards (KPI, funnel, geographic distribution) in Tableau; automated the generation of regular reports, reducing manual aggregation time.

Bank of Communications Huizhou Branch, Customer Service Manager   **06/2022–07/2022**
- Managed customer banking inquiries, ensuring a satisfactory service experience with prompt resolution