Shuyi Guo

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EDUCATION

University of Illinois Urbana-Champaign — Illinois, USA
Master of Science in Information Management, GPA: 4.0 — *Aug 2023 - May 2025*

Renmin University of China — Beijing, China
Bachelor of Laws in Economics, Politics, and Philosophy, GPA: 3.71 — *Sept 2019 - Jun 2023*

University College Dublin — Dublin, Ireland
Exchange student (Economics), GPA: 4.0 — *Jan 2022-May 2022*

RESEARCH EXPERIENCE AND PUBLICATION

LLM Multi-Agents Coordination and Competition Benchmark — Aug 2024 – Present
*UIUC CS, Advisor: Prof. Heng Ji [**under review**]* — *Illinois, USA*
- Created a benchmark with new metrics to evaluate multi-agent team in task-solving & social simulation scenarios.
- Developed an **LLM interaction framework**, including communication and planning modules, without relying on existing platforms like LangGraph, enabling flexible and highly customizable agent interactions.
- Designed a bargaining simulation environment, **generated synthetic dataset** by integrating personalized agent profiles with distinct psychological characteristics and negotiation strategies.
- **Publication Link:** MultiAgentBench: Evaluating the Collaboration and Competition of LLM agents.

Writing Instruction through Learning-by-Teaching using LLMs — Aug 2024 – Present
*UIUC iSchool, Advisor: Prof. Nigel Bosch [**Manuscript under preparation**]* — *Illinois, USA*
- Designed and implemented a **Flask-based web** platform with **Html, CSS, Javascript** to support learning-by-teaching-LLM experiments.
- Deployed backend models using **RunPod** and built a multi-agent communication framework with **LangGraph**.
- Leveraged **prompting strategies (e.g. Zero-shot, Few-shot, CoT)** and multi-agent coordination techniques.

Enhancing LLM Accuracy with RAG and KTO/DPO Methods — Jan 2024 – Dec 2024
Amazon-Illinois Center, Advisor: Prof. Volodymyr Kindratenko — *Illinois, USA*
- Utilized student questions from the **LLM TA platform** *(link here)* to build a **domain-specific LLM** with **Ollama**, tailored to address educational queries and enhance the relevance and quality of responses.
- Generated synthetic datasets using **RAG, self-critique, and LLM-as-a-judge techniques**, and fine-tuned LLMs with **KTO/DPO** and **LoRA/QLoRA** to improve response accuracy and domain-specific adaptability.

LLM Multi-Agents for Gene Expression Research — Aug 2023 – Jan 2024
UIUC iSchool, Advisor: Prof. Haohan Wang — *Illinois, USA*
- Utilized and adapted the **MetaGPT** framework to design and implement specialized AI agents (project manager, data engineer, domain expert) for analyzing gene expression data.
- Conducted extensive **medical data** collection and cleaning, preparing high-quality gene expression datasets to support experiments and ensure reliable results.
- **Publication Link:** Toward a Team of AI-made Scientists for Scientific Discovery from Gene Expression Data

COURSE PROJECTS

Reimplementation of RAG Framework: Embedded diverse datasets, including Sherlock Holmes novels and Wikipedia data, to evaluate retrieval-augmented generation capabilities and ensure robust testing.

Training Historical Text Detection Models: Fine-tuned TrOCR models on diverse historical handwriting datasets to enhance text recognition accuracy.

Sentiment Analysis with BERT on Yelp Reviews: Implemented preprocessing techniques such as stop-word removal, fine-tuned BERT for sentiment multi-classification tasks using Yelp restaurant review data.

INTERNSHIP

Intern Data Analyst @ *Dataway Horizon (Beijing)* — Sept 2022-Jan 2023
- Utilized a text classification model to categorize user complaints about various types of pollution (e.g., air, water, noise) into predefined pollution categories.

SKILLS

Languages: English (IELTS: 7.5), Chinese (native)
Technical Skills: Python (PyTorch, Flask), HTML/CSS, LangGraph/LangChain, Ollama
Relevant Courses: Data Mining; Data Structures and Algorithms; Advanced Topics in NLP, linear algebra