

Jinglin (JJ) Jian

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EDUCATION

University of Illinois Urbana-Champaign, School of Information Sciences Illinois, US
M.S. in Information Management/Sciences, GPA: 4.0/4.0 Aug 2023 - Dec 2024

Course: Large Language Models, Machine Learning, Text Mining, Database, Data Mining, Data Warehousing, Sociotechnical Info Systems, Independent Study

Peking University, National School of Development Beijing, China
B.Econ. (Double Major) Sep 2021 - Jul 2023

Beijing Normal University, Faculty of Education Beijing, China
B.S. in Educational Technology, GPA: 3.76/4.0 Sep 2017 - Jul 2021

Course: Data Structure, Database, Software Engineering, WebDev, Computer Network, Intelligent System

PUBLICATIONS

- [1] Haoyang Liu, Yijiang Li, **Jinglin Jian**, Yuxuan Cheng, Jianrong Lu, Shuyi Guo, Jinglei Zhu, Mianchen Zhang, Miantong Zhang, and Haohan Wang. "**Toward a Team of AI-made Scientists for Scientific Discovery from Gene Expression Data.**" arXiv preprint arXiv:2402.12391 (2024).
[Link] [Data and Code]

RESEARCH EXPERIENCE

Toward a Team of AI-made Scientists for Scientific Discovery from Gene Expression Data Aug 2023 - Feb 2024

Advisor: Prof. Haohan Wang (UIUC)

- Developed a **multi-agent system** called Team of AI-made Scientists (TAIS), the first work to automate scientific discovery using **Python** and **Large Language Models (LLMs)**.
- Wrote **Python** to grab data from GEO and TCGA & stored meta-data and raw-data for **efficient I/O** & Implemented **Data Engineer agents** to automate data preprocessing, integration, and selection.
- Implemented **Lasso regression** and **linear mixed models** and advanced techniques such as **confounding factor correction** using **Python** to enhance the accuracy and robustness.
- Established **collaborative workflow** and **feedback loop** among AI agents using **asynchronous programming** and message passing based on **event-driven stream processing**.

Semi-automatic Knowledge Graph Construction Sep 2020 - Jul 2021

Advisor: Prof. Qinhua Zheng (Beijing Normal University)

- Designed and implemented an **interactive** system for **domain experts** to work with AI models to construct **educational knowledge graphs** from unstructured text, reducing workload by 80%.
- Developed a **semi-automated** framework, integrating a **BiLSTM-CRF** model with **human involvement** for **entity recognition** and improving F1-score from 0.54 to 0.76.
- Utilized **Word2Vec** model to vectorize entities, used **sliding window** technique for **text segmentation** to obtain specific **entity relationships**, and stored them in **Neo4j** graph database.

Using Hypervideo to Facilitate Online Interactions Sep 2019 - Aug 2020

Advisor: Prof. Jingjing Zhang (Beijing Normal University)

- Summarized processes as per **role and permissions** and illustrated processes with **Swimlane charts** and **E-R diagrams**, designed the **prototype** of hypervideo using **Azure RP**.
- Reviewed literature of **cognitive load** and assisted in on-site **pre-test** and **post-test** experiments, conducted the **paired sample t-test** and analyzed **behavior patterns** by **Gephi**, culminating in a publication [Link] on 2021 *International Conference on Advanced Learning Technologies (ICALT)*.

PROFESSIONAL EXPERIENCE

Research Assistant

Aug 2023 – Present

Supervisor: Prof. Mackenzie Alston, Gies College of Business, University of Illinois Urbana-Champaign

- Contributed to a global **experimental economics** study investigating the impact of Twitter on scholars' academic visibility.
- Conducted literature review on designing **randomized controlled trials (RCTs)** with outcomes influenced by unobserved effort and **incentives** to enhance follow-up participation rates using **Zotero**.
- Analyzed data from 1,000+ academic profiles, developed algorithms to **identify** tweets, scraped academic information from Google Scholar, and utilized **Python** to manage 2,000+ emails.

Head on Online Learning Department

May 2019 – Aug 2022

China Starry Night (NGO / Startup)

- Directly reported to the CTO, expanded team from 5 to 30 members, increased the views of videos on Bilibili channel to 22k in 4 months.
- Won a **national award (Top 1%)** and was invited to the 5th China Education Innovation Expo.

SELECTED PROJECTS

- **ChemTutor: AI Q&A system with Inorganic Chemistry Textbooks** [Code] 2024
LLM Q&A system Question a 700-page Textbook LangChain
- **HMM-DRL Model for Data-driven Auto-Trading** [PDF] 2022
Reinforcement Learning Hidden Markov Model Time Series Data Financial Index
- **Evolution of Key Themes in Learning Sciences** [Web] 2022
Topic Model: LDA Data Visualization TF-IDF Text Mining

HONORS AND AWARDS

- **National Innovation and Entrepreneurship Training Program**, Ministry of Education 2021
- **Jianghaiziqiang Scholarship (1%)**, Beijing Normal University 2020
- **First-class Scholarship for Competition Excellence (1%)**, Beijing Normal University 2019
- **Outstanding for Academic Excellence**, Beijing Normal University 2017 - 2021

SKILL SET

Machine Learning & NLP

Programming Language

Framework & Database

Cloud

Code Management & Writing

LangChain, TensorFlow, PyTorch, SciPy, sklearn, gensim, NLTK

Python, Java, C, JavaScript, HTML, CSS, Matlab, Stata

React, Node.js, RESTful API, MySQL, MongoDB, Neo4j

AWS - EC2, S3, Lambda FaaS, API Gateway

Git/Github, Docker, Unit Testing, Tableau, L^AT_EX