# Jinglin (Ollie) Jian

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## EDUCATION

**The Scripps Research Institute**                    San Diego, California, US
*Ph.D. Program*                    *Aug 2025 - May 2029*
Current Focus: AI for Drug Discovery
Recipient of the **Kellogg Fellowship**, funded by the Kellogg Family and the ALSAM Foundation

**University of Illinois Urbana-Champaign (UIUC)**                    Illinois, US
*M.S. in Information Sciences*                    *Aug 2023 - May 2025*
Course: ML for Bioinformatics, Text Information Systems, Large Language Models, Data Mining

**Peking University (PKU)**                    Beijing, China
*B.Econ. in Economics Minor*                    *Sep 2021 - Jul 2023*
Course: Statistics, Applied Econometrics, Causal Inference Models

**Beijing Normal University (BNU)**                    Beijing, China
*B.S. in Computer Science and Education*                    *Sep 2017 - Jul 2021*
Course: Data Structure, Database, WebDev, OOP, Information Retrieval, Intelligent System, Data Mining

## PUBLICATIONS

Google Scholar: `https://scholar.google.com/citations?hl=en&user=pXY2xYkAAAAJ`

[Ongoing] **Jian, J.**, ..., & Chen, Q. The AI Scientist in Health: Potential, Challenges, and the Road Ahead. *Invited by NPJ Health Systems.*

[ACL'26 Submitted] Wang, Q., ..., **Jian, J.**, Guo, X., & Li, R. Human-AI Co-Discovery. *in submission of ACL 2026*

[TechRxiv] **Jian, J.**, ..., Chen, Q., Lu, Z., & Wang, Q. Exploring Agentic Multimodal Large Language Models: A Survey for AIScientists. (2025). *in submission of ACL 2026*

[arXiv] Liu, H., Li, Y., **Jian, J.**, Cheng, Y., ... & Wang, H. Toward a Team of AI-Made Scientists for Scientific Discovery from Gene Expression Data. *arXiv preprint arXiv:2402.12391* (2024).

[Published] **Jian, J.**, ..., & Chen, J. Big Data-Driven Computational Aptamer Design Framework via Parallel Monte Carlo Tree Search. *IEEE International Conference on Big Data* (2024).

[Accepted] Li, Z., **Jian, J.**, ..., & Zhang, Y. Patient Outcome Predictions via a Multimodal Language Model for Electronic Health Records. *IEEE International Conference on Big Data* (2024).

[Published] Hou, R., Zhou, D., & **Jian, J.** GeoCM: Exploring Consistency Models and EGNNs for Molecular 3D Structure Prediction. *UIUC Machine Learning for Bioinformatics Workshop* (2024).

[Published] Xiao, Y. & **Jian, J.** Which Animal Would You Like to See on Your Flashcards? Designing Visual Aids Together with Kids Using GIMs. *The 25th International Conference on Artificial Intelligence in Education (AIED 2024).*

# RESEARCH EXPERIENCE

**[TechRxiv'25] Exploring Agentic Multimodal Large Language Models:** *June 2025 – Nov 2025*
**A Survey for AIScientists**
*Advisor: Prof. Qingyu Chen (Yale), Prof. Zhiyong Lu (NIH), Prof. Qingyun Wang (William & Mary)*
– Lead author of a survey framing AIScientists from a machine learning centric and agentic multimodal LLM perspective.

**[arXiv'24] GeoCM: Exploring Consistency Models and EGNNs for** *Oct 2024 – Present*
**Molecular 3D Structure Prediction**
*Advisor: Prof. Ge Liu (UIUC)*
– Utilized **Equivariant Graph Neural Networks (EGNN)** and **Consistency Models (CM)** to train a self-supervised model to predict molecular 3D structures.
– Established two metrics **Coverage Rate** and **Matching Error** to compare GeoCM models against other models, demonstrating GeoCM **claimed a new SOTA**.

**[Big Data'24] Fast and Accurate Drug Discovery Framework** *Jan 2024 – Oct 2024*
*Advisor: Prof. Yang Zhang (UIUC) and Dr. Jin Chen (Cleveland Clinic)*
– Developed an enhanced parallel **Monte Carlo Tree Search** framework, considering aptamers' high-affinity and specificity for target proteins, achieving **98-fold** computational efficiency and **7.59-fold** improved sequence quality.

**[arXiv'24] Team of AI-made Scientists (TAIS)** *Aug 2023 – Feb 2024*
*Advisor: Prof. Haohan Wang (UIUC)*
– ML can discover disease-predictive genes from gene expression data. We introduced **TAIS**, a LLM-based framework for automatic streamlining ML analysis, outperforming **GPT4/MetaGPT/AutoGPT**.
– Fetched data from the **GEO/TAGC** database. Created the **GenoTEX**, a NEW benchmark for evaluating the exploration of genomics data, with aligning gene symbols, logging, and statistical corrections.
– Created several **agents** as scientists, via autonomously creating codes (**template-based prompting**), execution (**subprocess**), outputs/errors capture (**logger**), and built communication within (**Data Engineer**, **Code Reviewer**, and **Domain Expert** agents).

**[Bachelor's Thesis] Semi-automatic Knowledge Graph Construction** *Sep 2020 - Jul 2021*
*Advisor: Prof. Qinhua Zheng (BNU)*
– Developed a **semi-automatic** ML paradigm for **knowledge graph creation** for addressing time-consuming issues by combining **supervised ML** with **human-in-the-loop** incorporation.
– Developed a benchmark dataset for educational entities by annotating transcriptions using BIO tagging.
– Iterated a supervised **BiLSTM-CRF** model for **entity recognition** and dynamic term re-ranking (**mutual information** and **human feedback**), improving F1-score ($0.54 \rightarrow$ **0.76**).

# PROFESSIONAL EXPERIENCE

**Software Developer Intern** *May 2024 – Aug 2024*
*Supervisor: David Bachtler and Ian Cowen, ReDirect*
– Engineered subscription functionality using Flutter framework and implemented unit testing.

**Research Assistant** *Aug 2023 – Aug 2024*
*Supervisor: Prof. Mackenzie Alston, University of Illinois Urbana-Champaign*
– Conducted literature review (randomized controlled trials) using Zotero and scraped 2000+ emails.

**Head on Online Learning Department & Teacher Volunteer** *May 2019 – Aug 2022*
*China Starry Night (NGO)* [Web]
– Presented at the 5th China Education Innovation Expo (National Award - Top 1%).

## Selected Projects

– **Demo of ChemTutor: AI Q&A system with Chemistry Textbooks** [Code]      *2024*
  #LLM #Q&A system #RAG #LangChain
– **HMM-DRL Model for Data-driven Auto-Trading** [Paper]      *2022*
  #Reinforcement Learning #Hidden Markov Model #Time Series Data #Financial Index
– **Evolution of Key Themes in Learning Sciences** [Web]      *2020*
  #Text Mining #LDA-Topic Model #TF-IDF #Data Visualization

## Honors and Awards

– **National Innovation and Entrepreneurship Training Award (1%)**, Ministry of Education *2021*
– **Outstanding Teaching Practice (1%)**, Beijing Normal University      *2021*
– **Jianghaiziqiang Fellowship (1%)**, Beijing Normal University      *2020*
– **First-class Scholarship for Competition Excellence (1%)**, Beijing Normal University      *2019*
– **First-class Scholarship for Academic Excellence (10%)**, Beijing Normal University *2017 - 2021*

## Skill Set

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| **Machine Learning & NLP** | TensorFlow, PyTorch, LangChain, sklearn, NLTK |
| **Programming Language** | Python, Java, C, JavaScript, HTML, Stata |
| **Framework & Database** | React, Node.js, RESTful API, MySQL, MongoDB, Neo4j |
| **Cloud** | AWS - EC2, API Gateway |
| **Code Management & Others** | Git/Github, Docker, Tableau, Unit Testing, LaTeX |