Jing Gao

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Education

Washington University in St. Louis **Aug. 2023 – Expected 2025**
B.S. in Computer Science, double major in Entrepreneurship, minor in Mathematics *St. Louis, MO*

Technical Skills

Programming Languages: Python, Julia, Java, C, HTML/CSS, JavaScript, Shell
Developer Tools: VS Code, Git, Latex, Markdown, Google Cloud Platform, Amazon Web Service
Technologies/Frameworks: Linux, GitHub, ReactJS, VueJS, WordPress
Speak Languages: Chinese (Native), English (Proficient), Esperanto (Intermediate), Japanese (Beginner)

Certification

Large Language Models: Application through Production Databricks (edX) 2023
Mathematics for Machine Learning: Linear Algebra ICL (Coursera) 2022

Experience

Washington University in St. Louis **Oct. 2023 – PRESENT**
Research Assistant *St. Louis, MO*

- Utilized Julia programming language for developing and implementing data processing pipelines.
- Installed and maintained jupyter server application with encrypted token access.

Research Institute of Tsinghua, Pearl River Delta **Jun. 2022 – Aug, 2022**
Research Assistant & Project Manager Assistant *Guangzhou, Guangdong (China)*

- Constructed & evaluate machine models in severe environment.
- Sampled & analyzed data, then Specified & optimized mathematical models.

Publication

Guo, J., & **Gao, J.** (2022). **Comparison of Different Machine Learning Algorithms on Cell Classification with scRNA-seq after Principal Component Analysis**. 2022 7th International Conference on Intelligent Computing and Signal Processing (ICSP). doi.org/10.1109/icsp54964.2022.9778439 [Jingkai Guo and Jing Gao are both first authors]

Research & Projects

AI Jailbreaking | *Large Language Model, Jailbreak* **Dec. 2023 - PRESENT**

- Conducted comprehensive research into the mechanisms and limitations of large language models with a focus on identifying potential jailbreak scenarios.
- Developed a systematic approach to test and document various prompt-based techniques aiming to circumvent LLM restrictions.
- Analyzed the ethical implications and potential risks associated with the jailbreaking of LLMs, proposing guidelines for responsible disclosure.

Stockfish Chess Analysis | *Julia, Python, API, Data Analysis* **Oct. 2023 - PRESENT**

- Developed and optimized a large-scale data processing algorithm using Julia, handling pgn files of 200GB, significantly enhancing speed and accuracy.
- Revamped the original file scanning algorithm in Julia, achieving a 100x improvement in processing speed and efficiency.
- Designed and conducted experiments with game files in the evaluation engine, utilizing Julia and game theory concepts to analyze and improve strategic game outcomes.

Machine Learning & Computational Biology Research | *Python, Machine Learning*Jul. 2021 - Mar. 2022

- Collaborated in a hybrid research environment.
- Processed large-scale lab data.
- Built and compared statistical training models.

Honors & Prizes

Hack WashU 2023 Best Use of Google Cloud 2023
HackDartmouth VIII: Into The Multiverse Contrary Capital - Start Up Prize and 2 more 2023
American Mathematics Competition (AMC) 12 First Place * 2 (A&B) 2021
China Thinks Big (CTB) National First Prize & Global Round Qualification 2021