

JING GAO

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🐙 github.com/LZDXN

Education

Washington University in St. Louis

B.S. in Computer Science, double major in Entrepreneurship, minor in Mathematics

Aug. 2023 – Expected 2025

St. Louis, MO

Purdue University

B.S. in Computer Science, double major in Mathematics

Aug. 2022 – Expected 2025

West Lafayette, IN

Relevant Coursework

- OO Programming
- Discrete Math
- Machine Learning
- Program in C
- Data Structures & Algorithms
- Adversarial AI

Certification

Large Language Models: Application through Production

Databricks (edX) 2024

Group 2.Social Behavioral Research Investigators and Key Personnel

CITI Program 2023

Mathematics for Machine Learning: Linear Algebra

ICL (Coursera) 2022

Publication

Blair, J., & Gao, J., & Kishimoto, K. (2023). **Perceptions of Artificial Intelligence in College: A Case Study of Purdue University Liberal Arts Professors.** Purdue 2023 Spring Undergraduate Research Conference. 2023 Abstract Booklet (PDF) [Jack Blair, Jing Gao, Kian Kishimoto are three first authors]

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]

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.

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.

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.

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.

Saga: AI-Powered Writing Assistant | ReactJS, TypeScript, Large Language Model

Apr. 2023

- Developed an AI-powered assistant to solve pain points in the writing process.
- Implemented unique ID system and name completion function for characters.
- Utilized design and targeted user-friendly interface for educational purposes.
- Prepared for entrepreneur start-up.

HONR 29900: AI and Education Research | *AI, Creative Writing, Survey*

Jan. 2023 - May 2023

- Investigated the impact of AI (e.g., ChatGPT) on education.
- Coordinated and organized research proposal and qualitative data collection.
- Completed CITI Ethic Research Certificate.

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)

Honors & Prizes

Hack WashU 2023	Best Use of Google Cloud	2023
Purdue Spring Undergraduate Research Conference	Honors College 3rd Place	2023
HackDartmouth VIII: Into The Multiverse	Contrary Capital - Start Up Prize and 2 more	2023

Leadership / Extracurricular

IEEE – Purdue Aerial Robotic Team (PART)

Aug. 2022 – May 2023

ODLC Competitive Team Member

Purdue University

- Trained and applied an object detection model to accurately identify ground targets for competitive scenarios.
- Optimized the model's performance and deployed it on edge computing devices to ensure real-time operational capability.