Mai Xu He/Him

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Education

University of Michigan **Aug. 2022 – Apr. 2025**
Bachelor of Science in Computer Science *Ann Arbor, MI*

Shanghai Jiao Tong University **Sep. 2020 – Aug. 2022**
Bachelor of Science in Electrical and Computer Engineering *Shanghai, China*

Skills

Engineering: C/C++, Python, Javascript/Typescript, HTML, CSS/SCSS/Tailwind, Java, Lua | React, Flask, Django, NodeJS, Express.js, Next.js, Redux, Spring Boot, Tensorflow | MongoDB, PostgreSQL, SQLite
DevOps: AWS(EC2, S3), Docker, Jenkins, Playwright, Bash, Linux, Git, LaTeX

Experience

Software Engineering Intern **Apr. 2023 – Present**
Education Technology Collective, University of Michigan *Ann Arbor, MI*

- Building a JupyterLab plugin using Typescript and Express.js that detects learning moments from user coding activities and generate flashcards, increasing user flashcard creation and review activities by 20%.
- Implementing a robust API Gateway leveraging Mongo Atlas, facilitating storage and management of flashcard data.
- Collaborating with team to create a cross-platform mobile app using React Native that allow user to manage flashcards on their phone.

Software Engineering Intern **Jan. 2023 – Apr. 2023**
Laboratory of Mind, Machine, and Mathematics, University of Michigan *Ann Arbor, MI*

- Designed an intuitive and visually appealing morality game interface using React, TypeScript, and Material UI to study human cooperation, resulting in a 30% increase in user engagement.
- Enabled real-time cooperation among up to 50 players simultaneously by developing a Flask backend utilizing Socket.io, resulting in the collection of over 10,000 data points for studying cooperation in various scenarios.

Software Engineering Intern **May 2022 – Sep. 2022**
Laboratory of Information System Technology, Shanghai Jiao Tong University *Shanghai, China*

- Utilized Spring Framework and Maven to develop multiple service components for team users to automate workflow and self-define web pages for their projects, boosting productivity by 20% while enhancing customization.
- Resolved privacy issue in account database model by reconstructing models concerning user and team department.
- Deployed platform securely and efficiently with Docker and is used by over 40 teaching staff.

Data Analyst Intern **Jul. 2021 – Jan. 2022**
John Wiley & Sons, Ltd. *Shanghai, China*

- Developed Python scripts to analyze over 10,000 user data points, generate diagrams and reports, and provide actionable insights that informed strategic decision-making.
- Updated the journal homepage weekly and modified the user interface using HTML, Javascript and SCSS, resulting in an enhanced user experience and increased user engagement on the Wiley Online Library platform.

Projects

ChatGPT Privacy Browser Plugin | *React, API Gateway, AWS, Prompt Engineering* **April. 2023– Present**

- Developing a Chrome plugin using React, API Gateway that showcases and updates user's images in real-time based on chat activity, enhancing user engagement by providing immediate visual feedback.
- Architecting and deploying the app on Amazon EC2, using MongoDB to capture and analyze over 100 data points.

Thread Pool | *Modern C++, Multi-thread Programming* **Jan. 2023– Feb. 2023**

- Developed a thread library using modern c++ techniques such as RAII design patterns and smart pointers to ensure safe and efficient management of system resources.
- Created a test suite utilizing multi-thread programming to ensure thread safety, performance, and cover various scenarios including thread creation, synchronization, and error handling.

Ride-hailing Traffic Congestion Analysis | *Tensorflow* **Jul. 2021 – Jan. 2022**

- Participated in a school-industry research program with DiDi Global Inc. to provide insights on real-time road congestion to improve transportation infrastructure and decrease traffic congestion, ultimately impacting DiDi policy-making.
- Developed a Convolutional Neural Network model using Tensorflow to predict levels of road congestion, achieving a prediction accuracy of 90%.
- Visualized the relevant results using Matplotlib and Seaborn, providing an intuitive understanding of the traffic situation to policy-makers.