Xinghao Li

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Technical Skills

Languages: C | C++ | C# | Python | Java | JavaScript | TypeScript | HTML/CSS | SQL |
Frameworks: FastAPI | Flask | Django | React.js | Angular | Next.js | .NET | MySQL | PostgreSQL | PyTorch | Pandas |
Cloud/Tools: Linux | AWS | Azure | Docker | Kubernetes | Git | Github | Gitlab | Vercel |

Experience

AuraData - *Software Engineer* *May 2024 - Aug 2024*

- Led the end-to-end design and implementation of Single Sign-On (SSO) using Microsoft Azure and SAML 2.0, cutting **login time by 30%**, reducing password-support requests, and strengthening client and institutional security.
- Resolved and closed **100+ bug tickets** utilizing Microsoft Azure for issue tracking and automated unit/integration testing, **decreasing the work backlog by over 40%** and increasing client and user satisfaction
- Facilitated team brainstorming sessions and applied design thinking principles with rapid prototyping to resolve work tickets, collaborating closely with QA to accelerate pull requests and streamline deployments.

Mersivity - *Software Developer/Researcher* *May 2024 - Aug 2024*

- Conducted in-depth research for the Muse-AI project, analyzing correlations between alpha and beta brain wave activity and cognitive focus states, **leveraging neuroscience literature and producing experimental data.**
- Developed an Android application integrating with a Muse Headband to monitor real-time brainwave patterns and deliver personalized guided meditation sessions, **achieving an 80% improvement in sustained focus.**

UW Orbital - *Software Developer* *Sep 2024 - Current*

- Implemented Temperature Control System that detects critical temperatures to activate high-priority cooling system using **I2C** Serial Communication, actively **reducing component failure** and **decreasing material cost by 70%**
- Developed a custom 2-way communication API to connect the satellite in space to the ground station using Python and Postgres for backend and database management, achieving less than **30ms of latency round-trip**

Personal Projects

Forearm EMG Machine | *ESP32 | Python*

- Engineered a custom EMG machine by designing and assembling analog front-end circuitry (instrumentation amplifier, differential amplifier, filtering stages) and interfacing with an ESP32 for real-time signal capture.
- Developed embedded software in Arduino/C++ to sample muscle voltage signals on the ESP32, stream data via USB, and plot signals with stable time/voltage scaling for analysis.
- Built an interactive Python game that uses EMG muscle activity as input, demonstrating end-to-end integration of biosignal hardware with custom software for human–computer interaction

Automated Robotic Arm | *Python | C++ | CV2 | Mediapipe*

- Integrated Mediapipe and CV2 to plot hand coordinates based on live video, achieving less than **20ms of latency**
- Used various vector lengths and advanced linear algebra and trigonometry to build a custom depth-sensing program, resulting in **95% accurate relative depth tracking**, **reducing costs by $300** without a depth camera
- Simulated inverse kinematics of a 2-segment robotic arm to target real-time hand positions using Matplotlib; optimized performance with Python's `multiprocessing` module ensure smooth, low-latency motion planning.

AI-Doctor | *Python | Django | React.js*

- Developed a complete and robust fullstack webapp with **Django**/**Python** backend and **React.js** frontend, utilizing scalable **REST API framework** and implemented a secure authentication user login system with simpleJWT
- Engineered a custom AI chatbot leveraging the GroqAPI to enable real-time, lifelike doctor-patient interactions through both speech and text; integrated natural language processing and speech synthesis modules with OpenAI SDK to simulate medical consultations, enhancing user engagement and realism for a health consultation.

Education

University of Waterloo - BASc in Software Engineering **Sep 2024 - Present**

- **94%** Cumulative Average