Erica (Xuan) He

778-999-2637 hexuan426@gmail.com
Website GitHub LinkedIn

Skills

- Language: Python, JavaScript, Java, C/C++, HTML/CSS, SQL, PHP, MATLAB, ARMx64
- Tools: React, Node.js, MySQL, MongoDB, PostgreSQL, GDB, Sklearn, REST API, Postman, Bootstrap, Material-UI, jQuery, JUnit, Linux, SAP HANA

Education

University of British Columbia Expected May 2026
Bachelor of Applied Science - Computer Engineering GPA: $83_{/100}$
Courses: Java OOP, D.S. & Algorithm C++, Web Dev, Database Design, Computer Networking, Operating System

Technical Experience

HANA Support Engineer Intern **SAP Vancouver** 2024.09 - Present

- Led troubleshooting and optimization of SAP HANA databases, enhancing performance and stability in highly available and scalable production environments for Fortune 500 companies.
- Addressed complex system issues like high load, slowness, unresponsiveness; Engineered solutions encompassing system tuning, SQL optimization, workload and table management, minimizing downtime and boosting efficiency.
- Employed deep expertise in distributed system, Linux OS, SQL, DBMS, and networking to effectively use traces for rapid root cause diagnosis, consistently exceeding client expectations.

Research Assistance - Generative AI **UBC Sauder School of Business** 2024.04 - Present

- Enhanced workflows and led performance benchmarking for latest multimodal LLMs (Llava-next, Gemini, GPT4), improving training and validation processes by 25% through innovative data processing and prompt design.
- Developed a gesture classifier using Python by transforming raw footage into timestamped frames resized for optimal memory usage, applying ML evaluation metrics (scikit-learn) to achieve a 30% improvement in model accuracy.
- Streamlined audio feature extraction from 1500+ samples by designing a pipeline that segments MP3 and aligns timestamps, addressing token limits and blocked responses; this approach increased sample usability by 40% through effective result aggregation across multiple generative AI models.

Software Member - Pianobot **UBC Open Robotics** 2022.09 - 2023.11

- Engineered a translation system in C++ and Python using OOP to convert MIDI files into robot-readable data sequences, detailing hand positions and keyboard actions, crucial for real-time robotic control and accuracy.
- Designed and implemented rigorous unit and regression testing protocols to ensure the reliability and robustness of the system, aligning with industry best practices for software quality assurance.

Projects

Chatting App Javascript, Node, Flask, MongoDB, Rest API, Gen-AI

- Developed a secure and interactive Single-page Web Application using advanced JavaScript (prototypes, DOM, generators), Node.js (Express), Flask, REST APIs, and AJAX, following the MVC framework.
- Implemented WebSocket for real-time, bidirectional communication; Ensured robust security by managing user sessions, securely storing chats in MongoDB, and implementing defenses against XSS attacks using regex.
- Leveraged Generative AI with LLM (Llama2) for text analysis and DALL-E for image generation, enhancing user experience by offering emotive analysis and dynamic meme suggestions.

Wildfire Detection Module Python, React, MySQL, PHP, Apache

- Developed a real-time wildfire monitoring system using microcontrollers (Python) for continuous data collection, with efficient TCP socket-based data transmission to a PHP-hosted server on a remote Apache server in Linux OS, demonstrating LAMP stack utilization to simulate a robust cloud service environment for immediate processing.
- Created a responsive data visualization interface using React and TailwindCSS, facilitating real-time risk assessment and decision-making by dynamically displaying environmental sensor data fetched from MySQL database.

Grocery Shopping Web App MySQL, React, Rest API

- Led the development of a comprehensive e-commerce web app using React, Node.js, REST APIs, Material-UI.
- Normalized a complex MySQL database schema to BCNF, crafted 25 REST APIs, and optimized SQL queries to ensure efficient data retrieval.