Gordon Zhou

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Education

University of British Columbia Vancouver, BC
Bachelor of Science, Combined Major in Mathematics and Computer Science *Sep. 2023 - Expected May 2028*

- **Cumulative Average:** 91.5%, **Dean's Honour List**
- **Relevant Coursework:** Relational Databases (SQL), Computer Systems (C, Java), Data Structures and Algorithms (C++), Linear Algebra, Software Construction (Java, UML)

Technical Skills

Languages: C; C++; JavaScript; Rust; SQL; Python; Java; PHP; TypeScript; R
Tools/Frameworks: Git; Docker; Express; VSCode; IntelliJ; MongoDB; FastAPI; Flask; Firebase; JUnit
Libraries: React; Pandas; NumPy; Scikit-learn; SDL2; ImGui; OpenCV

Projects

Memora @Hack The North 2024 | *React, Python, ChromaDB, MongoDB* September 2024

- Developed a voice-powered journaling app in 24 hours, with a Retrieval-Augmented Generation (RAG) system using ChromaDB to summarize, analyze and gain insights from user's journal entries
- Developed a transcription pipeline using Google's Speech API, followed by LLM-based summarization, reducing journal size by 40% on average while preserving user intent for downstream analysis

MelonGB (https://gordnzhou.github.io/melon-gb) | *Rust, JavaScript* January 2024 - March 2024

- Engineered a backwards-compatible Gameboy Color(CGB) emulator which supports cycle-accurate execution of various DMG/CGB ROMs including Pokemon Crystal, Zelda Link's Awakening, and Shantae
- Modeled the Game Boy's 8-bit Sharp-like CPU, Picture Processing Unit, 8-bit Audio Unit in Rust using original hardware documentation
- Compiled Rust source code to Web Assembly (WASM) and integrated a front-end using JavaScript and HTML/CSS, enabling seamless, in-browser game-play with zero setup required
- Integrated automated tests of popular DMG/CGB test suites including Blargg's Tests, cgb-acid2, dmg-acid2, and majority of Mooneye's Test Suite

HTTP Server in C | *C, Git, Docker* June 2025

- Developed an HTTP server in C to serve static files via GET requests, using low-level system calls for file handling and socket communication
- Automated build and deployment with Makefile and Docker containerization, enabling consistent and efficient development workflows

Disaster Relief Response App | *SQL, PHP, CSS* January 2025 - April 2025

- Collaborated in a team of three to develop a PHP website for disaster relief coordination, including rescue tracking, volunteer management, and aid distribution
- Implemented storage of relevant data on a SQL database hosted on Oracle with query sanitization to prevent injection attacks

MoodPlay (https://mood-play.netlify.app/) | *React, TensorFlow, Vercel, Spotify API* January 2023 – June 2023

- Developed a full-stack web application using React as the Front-End and Vercel, which serves a custom REST API using Serverless Functions
- Trained a custom AI model for face emotion and drowsiness detection using TensorFlow, achieving real-time, hands-free music adjustment based on user's facial expressions

Relevant Experience

Teaching Assistant – CPSC 121: Models of Computation September 2024 – Present
University of British Columbia *Vancouver, BC*

- Taught and guided 500+ students in UBC's introductory computer science course, leading lab sections on computer circuit design and simulation, and offering personalized support for 180+ students in labs
- Led 108+ total hours of labs weekly to support students. Graded 200+ exams and assignments with personalized feedback on logical proofs and reasoning