

Gordon Zhou

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EDUCATION

University of British Columbia

Vancouver, BC

Bachelor of Science, Combined Major in Computer Science and Mathematics

Sep. 2023 - Expected May 2028

- **Cumulative Average:** 92.0%, **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: VSCode; IntelliJ; Visual Studio; PyCharm; Git; MongoDB; FastAPI; Flask; Firebase; JUnit

Libraries: React; Pandas; NumPy; Scikit-learn; SDL2; ImGui; OpenCV

PROJECTS

Memora @Hack The North 2024 | *React, FastAPI, 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
- Integrated Cohere's Command Model for embedding entries into high-dim vectors, enabling semantic searches to pull contextually relevant results beyond keyword matching

MelonGB (<https://gordnzhou.github.io/melon-gb>) | *Rust, JavaScript, HTML/CSS*

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 WebAssembly (WASM) and integrated a frontend using JavaScript and HTML/CSS, enabling seamless, in-browser gameplay 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

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
- Incorporated Spotify Embed API for the in-app music player and Spotify OAuth for authentication, enabling users to log in via Spotify and customize each mood's music

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 6 hours of labs weekly to support students. Graded 200+ exams and assignments with personalized feedback on logical proofs and reasoning

VT Coding Club President

September 2021 – September 2023

Vancouver Technical Secondary

Vancouver, BC

- Produced and hosted educational workshops for club's 50+ members, based on various topics in CS including Web Development, Competitive Programming and Game Design

