

Andy Zhang

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TECHNICAL SKILLS

Languages: C, C++, JavaScript, Python, SQL(Postgres, MySQLs), Java, R, Bash/Shell

Web Technologies: React.js, Ruby on Rails, Next.js, Node.js, Flask, HTML/CSS, Tailwind CSS

Tools/Frameworks: Git, Docker, AWS, MongoDB, Supabase, Linux, Windows, Jira, Confluence

EDUCATION

Simon Fraser University

Jan 2023 – Oct 2026 (Expected)

B.Sc. Honours in Computing Science, Minor in Statistics (GPA: 3.97)

WORK EXPERIENCES

D-Wave Systems

Performance Research Intern

🐙 [Source Code](#) | Sep 2024 – Current

- Designed, refined, and maintained the core Python codebase for D-Wave Ocean (open-source software development toolkit), optimizing for scalability and performance in quantum computing applications.
- Conducted benchmarking analysis to optimize graph embedding algorithms on D-Wave processor hardware, collaborating with the APT (Applications, Performance, and Tools) team to enhance overall system efficiency.
- Built a codebase to replicate recent **Quantum Supremacy** results, tested and debugged performance bottlenecks on emulators, and contributed to code reviews for continuous improvement.

SFU MAGPIE Lab

Summer Research Intern

[Source Code On Demand](#) | May – August 2024

- Applied pairwise logistic regression to predict tuberculosis (TB) genetic cluster memberships using epidemiological data from 11,000 patients. Model published in **Microbial Genomics**, 2023.
- Performed cluster analysis using SNP cutoff thresholds, untimed maximum likelihood phylogenetic tree construction, and spatial data; applied Principal Component Analysis (PCA) for dimensionality reduction.
- Utilized R for data cleaning, visualization, and analysis, and applied supervised learning models to benchmark quantitative predictions.

PERSONAL PROJECTS

LectureSync - StormHacks 2024

Next.js, Tailwind CSS, Vercel, APIs (OpenAI, Anthropic, Deepgram)

🐙 [Source Code](#) | Oct 2024

- Developed an AI-driven web app under 24 hours that converts voice recordings and online videos into multilingual text summaries, with text-to-speech playback and markdown formatting.

SquadMatch

Ruby on Rails, Supabase, JavaScript, Heroku, REST API, PostgreSQL

🐙 [Source Code](#) | Sep 2024

- Built a Ruby on Rails web platform connecting university students for sports and social events, with a relational database in PostgreSQL hosted on Supabase. Deployed the website on Heroku.
- Developed client-side features with JavaScript, integrating Google API for event locations, automated tests in Rails, local storage for event caching, and optimized loading with Turbo.

ScholarSerpent Application

Python, Tkinter, ttkbootstrap, SQLite, Docker

🐙 [Source Code](#) | May 2024

- Built a cross-platform academic performance app in Python with Tkinter, deployed via Docker for macOS and Windows, using SQLite for personalized grade tracking and analysis.
- Created statistical visualizations with Pandas and Seaborn using SFU's five-year Gatekeeping data, enabling precise grade placement insights across classes and departments.

Various Projects - Open Source Development Club

TypeScript, JavaScript, AWS, Python, APIs

🐙 [Source Code](#) | Current

- Serve as Technology Coordinator responsible for developing club tools and maintaining the website with TypeScript. Address technical challenges across client-side rendering, server performance, AWS/Firebase deployment, Git version control, and testing/debugging.