

# MARTIN WONG

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## EDUCATION

### Simon Fraser University

Bachelor of Science, Computer Science

Expected Graduation April 2027

Burnaby, BC

**Courses:** Data Structures and Algorithms, Database Systems, Software Engineering, Distributed Systems, Computer Networking

## WORK EXPERIENCE

### Electronic Arts

Software Engineer Intern

May 2025 – August 2025

Vancouver, BC

- Engineered and deployed an intelligent internal tooling system with **LLM RAG pipeline** using **Python**, cutting onboarding time and helping 30+ engineers quickly resolve codebase and documentation questions
- Built a scalable vector embedding pipeline indexing **millions of lines** of production codebases and **300+ pages of docs** using token-based chunking strategies, **AWS Bedrock**, and **PostgreSQL/pgvector**
- Designed a custom **MCP server** with a scoring system to dynamically rank and retrieve from docs, code, chat history, and user feedback, boosting positive user feedback from **29%** to **85%**
- Reduced infrastructure costs by 35% by deploying **FastAPI** on **AWS EKS** with **pgvector** on **Aurora**, leveraging on-demand **AWS Bedrock** inference and optimized connection pooling over managed vector search services

### Rivian & Volkswagen Group Technologies

September 2024 – April 2025

Software Engineer Intern

Vancouver, BC

- Led mobile development of a 2FA-secured driving feature on iOS and Android using **Swift** and **Kotlin**, enabling secure remote commands across all Rivian vehicles directly affecting **10,000+ customers**
- Implemented fault-tolerant command delivery via **APNS** and **Firebase Messaging** with Bluetooth byte/Protobuf fallback, and built time-based one-time passcodes using **HMAC encryption** and **GraphQL** for all notification failure scenarios
- Prototyped and deployed a native iOS screen recorder to **900+ App Center users** for automated bug reporting, capturing pixel buffer screenshots at 30-second intervals

### Avena Tech Corporation

July 2023 – September 2024

Software Developer (Part-Time)

Vancouver, BC

- Redesigned and deployed full-stack websites for digital marketing clients using TypeScript, **React**, Tailwind CSS, and Figma, reducing load times from **5 seconds to 1** second to improve SEO
- Streamlined deployment by utilizing Bash, Github Actions, and **Docker** to create a **CI/CD** pipeline for testing, building, and deploying containers, reducing development time by 50%
- Architected a microservices-based platform with containerized REST API endpoints using **Express.js**, **AWS S3**, and PostgreSQL, migrating 60+ WordPress blogs to a new efficient system

### Simon Fraser University iXLab

April 2023 – September 2023

Undergraduate Research Assistant

Vancouver, BC

- Developed IMU sensor simulation system in **Python** for validating machine learning models, processing XYZ accelerometer and gyroscope data from T2M-GPT generated motion sequences

## PROJECTS

### Encrypted P2P Chat App | React, TypeScript, WebRTC, PeerJS, Go | 💬

- Architected a serverless P2P chat application with end-to-end **AES-256-GCM** encryption using **WebRTC**, implementing NAT traversal with STUN/TURN servers for 95%+ connectivity
- Designed distributed file transfer protocol with chunked streaming, automatic retry logic, and congestion control for reliable large file transfers over unreliable networks

### Personalized AI Discord Bot | Python, Node.js, FastAPI, AWS Bedrock | 💬

- Fine-tuned Meta's Llama2 LLM on **120,000** Discord messages to create a personalized chatbot to respond in the style of the user
- Trained and deployed the fine-tuned model on Replicate accessed by a FastAPI endpoint, containerized on Docker and hosted on an **AWS EC2 instance**, and deployed via PM2 on a personal home Ubuntu server for continuous uptime

### Custom Blog Editor | React, Express.js, Node.js, PostgreSQL, Redis, TypeScript

- Developed a full-stack blog editor which allows users to create, update, and delete blogs to migrate away from Wordpress
- Implemented Redis caching layer to reduce database queries to improve response times

## TECHNICAL SKILLS

**Languages:** Python, Go, Java, Kotlin, JavaScript, TypeScript, C, C++, SQL, Bash, Swift

**Backend & Distributed Systems:** Docker, Kubernetes, AWS, PostgreSQL, MongoDB, Redis GraphQL, WebRTC

**Frameworks/Libraries:** React, Next.js, FastAPI, Express.js, Node.js, Jest

**Developer Tools:** Git, Postman, NGINX, Linux, CI/CD Pipelines, pgvector