

THOMAS CHENG

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EDUCATION

Simon Fraser University

Bachelor of Science in Computer Science

Burnaby, BC

Sept 2024 – Expected Dec 2027

Relevant Coursework: Database Systems, Networking, AI in Security, Computer Systems, Data Structures and Algorithms

PROJECTS

Load Balancer Simulator | Java, JavaScript, Spring Boot, React, JUnit, Docker

- Designed a load balancer simulator visualizing real-time traffic distribution across 6 routing algorithms(e.g., Round Robin, Least Connections), verified by 216 JUnit tests, built with Java 17 / Spring Boot and a WebSocket-streamed React dashboard.
- Built a one-command deployment of the entire app, as measured by a health-checked docker compose up run needing no local JDK, Maven, or Node installs, by authoring a multi-stage Dockerfile and a compose service with a healthcheck.

MCP-Enabled Task System (MTS) | MCP, Node.js, Copilot, MongoDB, TypeScript, Python, NoSQL, Microservices

- Engineered a microservice-oriented architecture with a TypeScript MCP service for AI interaction and a decoupled Python client for live task rendering.
- Developed an MCP server using Node.js and MongoDB to enable natural language CRUD operations through VSCode Copilot.
- Designed a Python client-server interface for rendering tasks onto an LED dashboard via local network protocols.

Pixoo Multiplexer | Python, FastAPI, asyncio, Pydantic, REST API

- Designed a FastAPI service that multiplexes multiple independent apps onto a Pixoo64 LED display, using a central ChannelManager with per-app FIFO queues and carousel round-robin scheduling for fair screen-time allocation.
- Built a priority queue with interrupt_event preemption path and an API-key authorization layer that gates device-control commands separately from drawing commands, preventing unauthorized disruption.
- Defined typed PixooRequest models with Pydantic validation at the API boundary, enabling safe multi-tenant access via a single REST endpoint.

WORK EXPERIENCE

Incoming Software Engineer

Heyno

Jan 2027

Texas, USA

Computer Science Tutor

Self-Employed

Sept 2023 – Present

Vancouver, BC

- Mentored students to consistently achieve 80%+ academic averages through mastery of data structures and algorithms.
- Designed comprehensive study plans based on documenting students' growth.
- Coached students in unit testing and debugging practices, which allow students to develop sustainable coding habits.

Sales Representative

Under Armour CA

Sept 2022 – Jan 2026

Richmond, BC

- Led foundational training for new hires, showcasing ability to convey complex concepts clearly and understandably.
- Managed high-volume customer transactions and prioritized client needs during peak retail seasons, translating to highly efficient, under-pressure problem solving.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C++ , Java, SQL

Frameworks/Libraries: Pydantic, React, FastAPI

Developer Tools: Git, Docker, AWS EC2