Coleman Lai

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Education

BSc, Major in Computing Science Sep 2023 – Present

Simon Fraser University, Burnaby, Canada | GPA: **4.00**

Dean's Honour Roll × 2, President's Honour Roll, SFU Open Scholarship × 3

Experience

Software Developer, Gen AI Co-op | IFS Copperleaf Sep 2025 – Present

- Built an AI agent using Azure AI Foundry C# SDK capable of intelligently retrieving product documentation via vector stores and search indexes with automatic source citations, dramatically speeding up knowledge discovery
- Deployed features through CI/CD workflows, accelerating feature rollout and maintaining high-quality releases

Developer | SFU Surge (Student Organization) Jul 2025 – Present

- Developed full-stack, secure websites for cases including a hackathon sites and portals for 1000+ participants
- Worked with product and visual design teams through Figma and Notion to design and build applications

Website Administrator and Designer | iListen Canada Jul – Oct 2024

- Upgraded company website on clean design principles, ensuring alignment with company values and increasing appeal
- Constructed a well-documented maintenance document, containing results of a needs analysis of the site
- Achieved 99%+ Lighthouse scores across SEO, performance, and accessibility through targeted site optimizations

Projects

Celestial Maze | SFU Surge | Svelte, TypeScript, Firebase | Aug – Oct 2025

- Created a hackathon-promoting dungeon crawling game with procedurally generated mazes and enemy pathfinding
- Architected a constraint-based maze generator using graph theory to validate room connectivity and path reachability
- Optimized maze generation and rendering pipeline with object pooling, delta-time game loops, and spatial grid collision detection achieving <200ms load times and consistent 60 FPS performance across all devices

grid-detection | Python, PyTorch, NumPy, Pillow | Jul 2025

- Developed a machine learning-based computer vision pipeline to infer grid sizes from origami box-pleated crease patterns, allowing for detection of 23 of the most common grid sizes in an accurate and rapid manner
- Used a previously self-developed Python library for crease pattern manipulation to aid the preprocessing pipeline
- Generated synthetic training data through a randomized algorithm simulating realistic crease pattern structures

Hermes | Hugging Face MCP Hackathon | React, TypeScript, Python, Node, Docker, MCP, PostgreSQL | Jun 2025

- Programmed a Model Context Protocol-enabled tool that automates asynchronous API calls with configurable functions, simplifying API monitoring, data logging, and performance analysis through secure authorization steps
- Structured adaptive API handling in Python, including parsing of header tokens and complex user parameters
- Linked functions to SQL database operations, ensuring properly handled edge cases and data security

Be Square (Best AI Hack) | StormHacks | JavaScript, Node, OpenAI, Adobe API | Oct 2024

- Created an Adobe Express add-on for agentic canvas element generation through natural language processing
- Set up over parametrized 12 function calls for real-time natural language generation, integrating OpenAI API
- Engineered a WebSocket connection, linking server-side function calls to client-side element creation functions

Skills

Languages: Python, JavaScript, TypeScript, HTML/CSS, C, C++, SQL, C#, R

Programs/Tools: Visual Studio, VSCode, Git, Azure SDK, OpenAI API, MCP, Docker, PyTest, WebSocket, Unity

Libraries/Frameworks: PostgreSQL, MongoDB, Node.js, React, Svelte, Angular, TailwindCSS, ExpressJS, Azure Portal

Other: Agile, Scrum, DevOps, DSA, CI/CD, Software Development Lifecycle (SDLC), Socket Programming