Coleman Lai

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Education

BSc, Major in Computing Science   Sep 2023 – Present
Simon Fraser University, Burnaby, Canada | GPA: **3.98**
Dean's Honour Roll × 2, President's Honour Roll, SFU Open Scholarship × 3

Experience

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 the web applications

Website Administrator and Designer | iListen Canada   Jul – Oct 2024
- Upgraded company website built on WordPress, 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

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

Project SPHENE (Most Original Hack) | DreamHacks | React, TypeScript, Node, OpenAI, MongoDB | 🔗   Mar 2025
- Created a backend system utilizing AI agents to cross-reference peer content and suggest missing material
- Designed a system to detect knowledge gaps and generate style-matched suggestions using the OpenAI API
- Utilized MongoDB to securely store and organize user notes, allowing synchronization on the QuillJS text editor

Data Dave | nwHacks | React, TypeScript, Flask, NumPy, OpenAI | 🔗   Jan 2025
- Built a CSV analysis AI assistant that makes data analysis accessible by generating plots, summarizing data, and performing accurate calculations on large CSV files through a chat-like interface, made in React and Python.
- Engineered a context-aware LLM system to prevent AI context loss and hallucinations, ensuring accurate analysis
- Implemented dynamic visualization generation and data analysis using OpenAI API's function calling capability

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, OpenAI API, MCP, Docker, PyTest, WebSocket, Unity, WordPress
Libraries/Frameworks: PostgreSQL, MongoDB, Node.js, React, TailwindCSS, ExpressJS
Other: Agile, Scrum, DevOps, DSA, CI/CD, Software Development Lifecycle (SDLC), Socket Programming