SAMANTHA (SAM) LUI

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EDUCATION

Bachelor of Computer Science (Third Year) | University of British Columbia   *September 2024 – May 2027*
Advanced Diploma – Clinical Genetics (88%) | British Columbia Institute of Technology   *August 2020 – October 2021*
Bachelor of Health Sciences (Fall 2015 – Dean's Honour Roll) | Simon Fraser University   *September 2011 – December 2017*

TECHNICAL PROJECTS

SipLy – Full-Stack Beverage Tracker | Personal | GitHub   *July 2025 – Present*

- Built and iteratively improved a beverage tracking application from a Java CLI/Swing prototype to a full-stack **React + Spring Boot** system, enabling users to visualize intake metrics through a dynamic bar graph using the **Recharts** library
- Designed **RESTful CRUD APIs** for user logs and goals with persistent storage in **H2** and secure authentication via **BCrypt**
- Utilized **Spring AI** with **Groq LLaMA3** to deliver tailored recommendations based off user-logged data

Personal Portfolio Website | Personal | GitHub | Link   *May 2025 – Present*

- Maintained and deployed a responsive portfolio website, created with **React**, **Vite** and modern web standards to showcase technical projects and professional experiences, strengthening personal branding with deployment on **Netlify**
- Integrated libraries (**Typed.js**, **EmailJS**, and **React-Router-DOM**) to enable enhanced user engagement and client-side email functionality
- Built reusable **React** components to reduce code duplication, supporting scalable component-based architecture

DailySips | Academic | GitHub   *January 2025 – April 2025*

- Designed a **Java CLI** and **Swing** application, applying **OOP principles** to manage daily intake of calories, sugar and caffeine, supporting informed health tracking
- Implemented **JSON data persistence** to enable reliable saving/loading of user data, supporting consistent app usage
- Developed unit tests via **JUnit Jupiter** to validate app logic and edge cases, improving code robustness and maintainability

Pantry Pal – AI Recipe Generator | BCS Hacks 2025 | GitHub   *March 2025 – March 2025*

- Co-developed backend logic using **Express.js** and **MongoDB Atlas** for a full-stack **AI-powered** recipe generator application, built using **React + Vite**, supporting persistent cloud-based virtual pantry tracking across multiple sessions
- Integrated **Groq's LLaMA 3.3 API** and engineered dynamic prompts to automate recipe generation from user-based inputs

Predicting Player Recruitment with PLAI | Academic | GitHub   *September 2024 – December 2024*

- Conducted **exploratory data analysis** using **Jupyter Notebooks** on PLAIcraft playtime data from the Pacific Laboratory for Artificial Intelligence to identify player engagement trends, for further refinement of participant recruitment strategies
- Supported the development of a **K-NN regression model** in **R/Tidymodels** to predict total playtime (**RMSPE**: 23.8 hours), identifying model and data limitations to guide future research methodologies

PROFESSIONAL EXPERIENCE

Provincial Health Services Authority – Clinical Genetics Technologist | Vancouver, B.C   *July 2021 – August 2024*

- Coordinated workflows for complex genetic diagnostics by collaborating with clinical teams to ensure timely results delivery
- Liaised with IT and vendors to **troubleshoot** LIS and equipment software/hardware issues, reducing operational downtime
- Mentored practicum students and new technologists, building technical expertise and accelerating onboarding

EXTRACURRICULARS & LEADERSHIP EXPERIENCE

The C.O.D.E. Initiative – Remote Volunteer Tutor | Vancouver, B.C.   *September 2024 – April 2025*

- Facilitated **Python** and **web development** lessons to neurodivergent youth, adapting teaching style to support learning needs, increasing overall confidence in technical problem solving

TECHNICAL SKILLS

Languages | HTML5, CSS3, JavaScript**, C++,** Python, Java, SQL, R
Frameworks/Libraries | React.js, Node.js/Express.js, Spring Boot, Spring AI, Recharts, Tidyverse (ggplot2), Tidymodels, JUnit Jupiter, Java Swing
Databases | PostgreSQL, MongoDB (NoSQL), H2 Database Engine
Developer Tools | Git, GitHub, Postman, Vite, VS Code, Jupyter Notebooks, Netlify, Filmora, Canva, Groq API

UBC Science Co-op

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