

Sophia S. Liao

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Skills

Languages: Java, JavaScript, Python, MATLAB, HTML, CSS, C, C++, R

Technologies and Tools: Git, Excel, SolidWorks, Jupyter Notebook, VS Code, Cursor

Libraries and Frameworks: NumPy, pandas, scikit-learn, TensorFlow

Laboratory: Aseptic Technique, Spectrophotometry, Microscopy, Micropipetting, Bacterial Culture Incubation

Education

University of British Columbia

BASc in Biomedical Engineering, Minor in Commerce

Sept 2023 – Present

- Applied Science CO-OP Program

Projects

Sustainabite - Smart Recipe Recommender - Personal Project

April 2025

- Developed a web app that recommends recipes using ingredients users already have, aiming to reduce food waste and support food-insecure communities via training machine learning model on 500,000+ recipes for ingredient-based meal predictions.
- Tools: Python, TensorFlow, Machine Learning

Wikipedia Program - Concurrency-Safe Wiki Mediator - UBC

November 2024

- Using JWiki API, developed a backend mediator for Wikipedia queries with a custom LRU cache for efficient result storage and time-based eviction.
- Tools: Java, Algorithms, Data Structures

Knee Injury Prevention Design Project - Markerless Motion Tracking - UBC

Sept 2024 - Dec 2024

- Applied machine vision techniques to analyze knee joint movement and jumping mechanics without motion markers. Blended biomedical knowledge with programming to address a real-world problem by proposing design solution.
- Tools: MATLAB, MediaPipe, Image Processing

Buzzy Buddy Band - Medication Adherence Wearable for Children - UBC

Jan 2025 - April 2025

- Designed a pediatric wearable device to support children with Type 1 Diabetes adherence using user-centered and accessible design principles.
- Tools: Hardware, SolidWorks, CAD, Product Design

Leadership

Social Coordinator, Biomedical Engineering Undergraduate Student Association

May 2025 – Present

- Organized events for students, ranging from seasonal socials to large scale parties and formals with a focus on the biomedical engineering community. Directing various budgeting, marketing and communication tasks related to event planning and sponsorships.

Other Work Experience

Coding Instructor, UTG Academy – Vancouver, BC

Nov 2025 – Present

- Educated 60+ students, ages 10-12, on the basics of programming and artificial intelligence, with application to simple python experiences.

Administrative Assistant, 3J Holdings – Regina, SK

July 2024 – Aug 2024

- Managed financial records, including invoicing and expense tracking, using Excel to ensure accurate and efficient property management operations.