

Sophia S. Liao

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Skills

Sterile Technique: Aseptic technique, biosafety protocol adherence, UBC Laboratory Safety Certification

Solution Handling: Micropipetting, buffer preparation, dilution series

Cell and Tissue Analysis Fluorescent staining, microscopy (brightfield and fluorescence)

Analytical Methods: Spectrophotometry, FIJI, PyMol, Jupyter Notebook, VS Code, Git

Education

University of British Columbia

BASc in Biomedical Engineering, Minor in Commerce

Sept 2023 – Present

- Applied Science CO-OP Program

Projects

DNA Manipulation and Imaging - BMEG 245 Course Labs

Fall 2024

- Executed fluorescent staining and imaging of actin and nuclei using F-actin dyes and eVOS microscope.
- Conducted gel electrophoresis and DNA digestion using various enzymes to isolate plasmid segments.
- Analyzed experimental data using FIJI software, plotted intensity profiles and generated statistics.
- Operated pipetting protocols, buffer and solution prep, maintained clean lab standards.
- Provided proper documentation, such as results in scientific reports with clear methodology and interpretation.
- Tools: FIJI software, MATLAB, Wet Laboratory

Knee Injury Prevention Design Project - Markerless Motion Tracking

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

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.