

Sophia S. Liao

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Skills

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

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, BSc in Biomedical Engineering

Sept 2023 – Present

- Applied Science CO-OP Program
- **Coursework:** Software Construction, Cellular Physiology and Biophysics, Biomedical Engineering Design

Other Work Experience

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.
- Assisted with tenant communications, lease agreements and financial reporting, contributing to the overall administrative and operational efficiency of the company.

Student Assistant, Dance City – Regina, SK

Sept 2019 - June 2023

- Taught more than 50 children weekly in tap, jazz, ballet, and lyrical dance, while preparing and rehearsing 10+ routines for regional competitions, achieving notable placements.
- Provided customer service by communicating feedback to dancers and families and engaged with potential students and families through front desk interactions.

Projects

Sustainabite - Smart Recipe Recommender

April 2025

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

Wikipedia Program - Concurrency-Safe Wiki Mediator

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

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