

MIRANDA CHEN

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EXPERIENCE

MAY 2023 – AUGUST 2023

DATABASE PROGRAMMER (SUMMER 2023 CO-OP), OAK RIDGES HEART CLINIC

- Developed program using **Python (NumPy, SciPy, Matplotlib, Pandas)** that diagnoses ECG rhythm abnormalities (PACs and PVCs) from a 10-second ECG with an **accuracy of 80%**, providing a valuable diagnostic support tool to healthcare professionals.
- Improved workflow efficiency by **65%** using **Selenium** to automate the retrieval, upload, and classification of patients' medications, documents and lab results into the clinic database.
- Implemented optical character recognition (**Tesseract-OCR**) to convert scanned faxes into searchable PDFs, reducing manual work by **5+ hours** per week.
- Designed and developed a streamlined, user-friendly E-form to enhance the process of medication reconciliation and prescription using **JavaScript** and **HTML/CSS**.

JAN 2023 - PRESENT

WATOLINK, AL/ML TEAM MEMBER

- Researched frequencies and bio signals in consideration for using **Steady-State Visual Evoked Potential (SSVEP)** as a paradigm to control a **brain-controlled interface (BCI)** wheelchair.
- Developed and executed a testing plan for data collection to evaluate the feasibility of SSVEP as a paradigm.

SEPT 2022 – JAN 2023

BIOTRON, SOFTWARE TEAM MEMBER

- Processed EMG signal data using **Python** libraries such as **Pandas, NumPy**, and **Matplotlib** to train a machine learning model with the goal of improving prosthetic development.

PERSONAL PROJECTS

MIRANDA-101, REACT, JAVASCRIPT, HTML, CSS

- Designed and developed a personal website designed to showcase skills, experience, and software development projects.
- Utilized **Bootstrap** and **React Router** to create responsive design and provide dynamic user experience.

NUTRICART (IGNITION HACKS 2023), REACT, JAVASCRIPT, TYPESCRIPT, HTML, CSS

- Created Chrome Extension that helps keep track of calories and macronutrients in your Instacart when you buy groceries online.
- Implemented **Nutrient API** to obtain nutritional values of each item in shopping cart.
- Developed interactive UI that calculates your recommended nutritional intake and compares it to the nutritional value of your shopping cart while giving instant feedback on your cart's nutritional status.

M&M'S BOOK NOOK, C++

- Developed a program that allows users to efficiently manage and organize book data in a book database
- Incorporated a login and registration system and implemented face detection using **OpenCV** to enhance program security.

EDUCATION

SEPT 2022 - PRESENT

UNIVERSITY OF WATERLOO, CANDIDATE FOR BACHELOR OF APPLIED SCIENCE (HONOURS)

- Biomedical Engineering (Co-op)