

MIRANDA CHEN

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SKILLS

Languages: JavaScript, TypeScript, HTML, CSS, Python, SQL, PHP, C++, Java

Tools: React, React Router, Node.js, Bootstrap, NumPy, SciPy, Matplotlib, pandas, Tesseract-OCR, MySQL, OpenCV

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 from a 10-second ECG with an **accuracy of 80%**, providing a valuable diagnostic support tool to healthcare professionals.
- Implemented optical character recognition (**Tesseract-OCR**) to convert scanned faxes into searchable PDFs, reducing manual work by **5+ hours** per week.
- 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.
- 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

- Designed and developed a personal website using **React.js** 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)

- Created a Chrome Extension using **React** and **TypeScript** that tracks calories and macronutrients when buying groceries using Instacart.
- 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.

MEDI+FORM (HACK THE GLOBE 2023)

- Developed Chrome Extension using **JavaScript** and **HTML/CSS** to improve health literacy by translating medical jargon into simple terms and auto filling personal medical information.
- Incorporated **Speech Synthesis Utterance API** to read aloud medical jargon terms along with their lay definition.

EDUCATION

SEPT 2022 - PRESENT

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

- Biomedical Engineering (Co-op)