Josiah Tsang

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TECHNICAL SKILLS

Languages: TypeScript, C++, C#, Python, Kotlin, VHDL, SystemVerilog
Technologies: React, Node.js, Express, MongoDB, Bootstrap, Tailwind, Axios, TensorFlow, Android Studio, Figma, Git
Coursework: Object Oriented Programming, Data Structures and Algorithms, System Software Engineering, Machine Learning

EXPERIENCE

Software Developer Sept 2022 – Present
UBC Multifaceted Innovations in Neurotechnology (MINT)
- Contributing to software development for multi-disciplinary engineering design projects focused on medical technology.
- Developing a CRUD app using the MongoDB, Express, React, Node.js (MERN) stack to retrieve, analyze and store EEG signals.
- Building a user intuitive interface for visualizing and interacting with EEG data using React, TypeScript and Bootstrap.
- Assisting with backend development by writing RESTful API routes and making endpoint requests using Axios.

Software Developer Intern Jan 2022 – Aug 2022
AirOps
- Developed business databases in Airtable and build Zapier automations for clients to streamline their business workflows.
- Accessed APIs to migrate data from external sources and wrote scripts in JavaScript to implement custom database features.
- Wrote scripts using JS and Airtable's API to retrieve data across multiple tables within a database for a retail client.
- Automated 40 task creations with condition-based triggers for a multi-phase retail project spanning 4 linked databases.
- Built an automated email system in Airtable for a product distribution client that pulls order data into specific fields.

Building Code and Fire Protection Engineer Jun 2015 – Aug 2019
GHL Consultants Ltd
- Introduced and implemented an Excel-based software program to automate spatial interpolation calculations.
- Held internal onboarding sessions to instruct technical staff of 30 – 40 employees how to use the program.
- Increased office efficiency by reducing billable hours by 5 hours per project, equating to 500+ work hours saved annually.

PROJECTS

ScorePort | *Kotlin, C++, Android Studio, Figma* Sept 2021 – Apr 2022
- Programmed an Arduino-based MCU to display score, shots and clock, and accompanying Android app controller.
- Implemented Bluetooth connection using Android Bluetooth Module to transfer data to the MCU on a connected thread.
- Utilized serial communication on the MCU to receive commands sent from Android app and update NeoPixel LED display.
- Designed mobile app wireframes in Figma and translated wireframes into Kotlin for the mobile app graphical interface.

Classification of Hand Dominance from EEG Signal | *Python, Scikit-learn, TensorFlow* Sept 2022 – Dec 2022
- Conducted 90+ hand dominance tests on individuals to collect EEG brainwave signals to build a comprehensive dataset.
- Built and trained various machine learning classifiers including Support Vector Machine (SVM) and K-Nearest Neighbour.
- Achieved an 80.65% model accuracy with a Non-Linear SVM while meeting minimum sensitivity and f-score metrics.

Spatial Calculator | *HTML, CSS, JavaScript* Aug 2021
- Built a responsive web app for engineers and architects to check Building Code permitted distance between buildings.
- Practiced object-oriented programming concepts to construct a class for bilinear interpolation of Building Code values.

EDUCATION

The University of British Columbia Sept 2019 – May 2025
Bachelor of Applied Science (BASc.), Integrated Engineering (Computer & Electrical)

British Columbia Institute of Technology Graduated May 2015
Diploma in Civil Engineering Technology, Civil Engineering