William Ryan Chiu

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Technical Skills

Languages: C/C++, Java, Python, Javascript, TypeScript, HTML/CSS, SQL

Libraries and Frameworks: React, Node.js, Express, Mongoose, Blender, YOLO V8, FastAPI, SpringBoot, NextJS

Technologies: Git, Linux, MS 365, MongoDB, Postman, Docker, Kubernetes, Azure DevOps, Maven, Swagger

Experience

Full Stack Developer, *Government Of Ontario (MPBSDP)* May 2025 - August 2025

- Built **Kubernetes deployment, Ingress and Secrets Store CSI configurations** for the Organ Donor Registration (ODR) service; managed multiple **Azure environment variable groups**; implemented a **6 stage Azure DevOps pipeline** with template stages to enforce **DRY principles** and ensure consistent, maintainable deployments.
- Implemented 5 of 8 sequential pages for the Integrated Address Change (IAC) **TypeScript** form, adding **regex validation, bilingual (English/French) translations, Next.js mock endpoints and custom page navigation** to improve data accuracy, meet accessibility standards, and streamline the user experience.
- Led development of the Organ Donor Registration (ODR) backend in Java Spring Boot with Maven, contributing **~90%** of the codebase. Integrated with **C# API Managers** and exposed REST APIs via **OpenAPI/Swagger**. Designed the system for full REST statelessness, implemented **Caffeine caching** to reduce email template retrieval latency, and built **functional interface-based data validation** for scalable handling of new web request types. Developed a custom **AOP logging framework** and **DFS** JSON data masker to anonymize sensitive data for **Application Insights logging**, ensuring **security, privacy compliance and scalability** for **16M+** Ontarians.

Firmware and Groundstation Developer, *UW Orbital Design Team – Waterloo* Sept 2024 - Present

- Built Out Ground Station's telemetry Data Endpoint using **FastAPI and PostGreSQL**
- Implemented SGP4 Propagator using **SGP4 library** to calculate the team's satellite position; unit tested using **PyTest**

Projects

Personal Calorie and Meal Tracker | *React, Node.JS, Express, MongoDB, Postman* Dec 2024 - Jan 2025

- Developed a responsive, user-friendly website for personalized calorie tracking and meal planning
- Implemented a login and user creation page, intuitive UI, and search capabilities created using **React**
- Data **stored and encrypted** in MongoDB database; backend formed using **Express, Node.js, and Mongoose**

Quantum Computing Algorithm to Minimize Power Loss | *Python, DWave* Aug 2022 - May 2023

- Co-Developed a cloud based quantum computing program which minimizes power loss
- Co-Developed the **DFS** method and formula for weighting edges
- Won National Silver Medal, Energy Challenge Award, Hydrogen-Optimized Award

Other Projects |*HTML, CSS, JavaScript, Python, Gemini, 3JS, FastAPI, AssemblyAI, Blender, Vercel, Bash*

- Voice-controlled **Gemini Chrome Extension** to help the visually impaired navigate the web
- A twitter connections data visualizer using **3JS, HTML, CSS, Grok**
- Personal Website built in **Blender**, programmed using 3JS with React, and deployed on **Vercel**
- Voice Controlled Wheel Chair built using a **Raspberry Pi Zero**

Education

University of Waterloo, *Software Engineering* Sept 2024 – Present

- **CGPA:** 3.96
- **Activities:** UW Orbital Design Team, Waterloo Engineering Endowment Fund Program Representative