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) project, managing Azure environment variables, and designing a 6-stage Azure DevOps pipeline with template stages to apply 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

- **GPA:** 4.0
- **Activities:** UW Orbital Design Team, Waterloo Engineering Endowment Fund Program Representative