

# William Ryan Chiu

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## Technical Skills

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

**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, Firebase, Swagger

## Projects

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**Trading Algorithm Sandbox** | 3JS, HTML/CSS, React, FastAPI, Docker, PostgreSQL, Jan 2025 - Present  
Firebase

- Containerized Backend, Frontend, and Database on **Docker** to improve scalability and streamline deployment
- Currently developing interactive dashboard using **React** and building out **FastAPI** Backend
- Data stored in **PostgreSQL** database; authentication conducted using firebase

**Personal Calorie and Meal Tracker** | JS, HTML/CSS, React, NodeJS, Express, Dec 2024 - Jan 2025  
Mongoose, MongoDB, Postman

- 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** and deployed on **Vercel**
- Voice Controlled Wheel Chair built using a **Raspberry Pi Zero**

## Experience

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**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**

**Full Stack Developer**, Government Of Ontario Sept 2024 - Dec 2024

- Wrote **Kubernetes** files for web deployment; created 5 stage **Azure DevOps** pipeline using DRY principles
- Created **React** frontend address change system with **regex** validation, **french translations**, **NextJS** mock endpoints, and custom page navigation logic
- Solo **Java SpringBoot** developer of the Organ Donor Registration Backend

## Education

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

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