WILLIAM CHIU

416-568-2618 | w4chiu@uwaterloo.ca | linkedin.com/in/williamrchiu | github.com/WilliamRChiu |
williams-portfolio-nu.vercel.app/

Education

University of Waterloo   **Sep. 2024 – May 2029**
Bachelor of Software Engineering, Honours Co-Op   *Waterloo, ON | CGPA: 4.0*
First-year Waterloo Engineering Endowment Fund (WEEF) Representative — 1A & 1B

Experience

Ontario Government (MPBSDP)   **May 2025 – August 2025**
Full Stack Developer   *Toronto, ON*
- Led **CI/CD modernization** for the Organ Donor Registration platform by architecting a **Kubernetes-based deployment strategy** using Docker, Deployments/Ingress, and Secrets Store CSI. Built a templated, **six-stage Azure DevOps pipeline** powered by a secure **PowerShell** script for injecting Azure environment-variable groups, resulting in **DRY** workflows, consistent releases, and **99% uptime** across all environments.
- Modernized the Integrated Address Change (IAC) platform by developing 5 of 8 sequential **TypeScript** form pages using **React-Hook-Form** with regex-based data validation, bilingual (English/French) translations, custom navigation, localStorage persistence across refreshes, and **Next.js** mock endpoints, resulting in **improved accessibility compliance** and a **seamless user experience**.
- Spearheaded 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**, adding **resilience features** and implementing a **circuit breaker pattern** in the WebClient to **gracefully handle failed API calls**.
- Implemented **Caffeine caching** to cut email template retrieval latency by **80%**, 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 **Azure Application Insights**, ensuring **security**, **privacy compliance**, and **scalability** for **16M+ Ontarians**.

Wat.AI: SEE-DR   **September 2025 – Present**
Deployment and Modeling Team   *Waterloo, ON*
- Supporting deployment and optimization of AI models for a low-cost mobile screening tool that detects early signs of diabetic retinopathy (DR) using smartphone-captured retinal images.

UWOrbital   **September 2024 – March 2025**
Backend Developer   *Waterloo, ON*
- Implemented an SGP4 propagator with the **SGP4 library** to calculate the team's satellite position and validated accuracy through unit tests built with **PyTest**.

Projects

Personal Calorie and Meal Tracker | *React, Node.js, Express, MongoDB, Postman*   **Dec 2024 – Jan 2025**
- Developed a responsive, user-friendly web application for personalized calorie tracking and meal planning.
- Implemented a login and user creation page, intuitive UI, and search capabilities using **React**.
- Designed and secured data storage with **MongoDB**; built backend services using **Express**, **Node.js**, and **Mongoose**.

Quantum Computing Algorithm to Minimize Power Loss | *Python, D-Wave*   **Aug 2022 – May 2023**
- Co-developed a cloud-based quantum computing program designed to minimize power loss in energy systems.
- Created the **DFS** method and formula for edge weighting in the optimization algorithm.
- Recognized with a **National Silver Medal**, **Energy Challenge Award**, and **Hydrogen-Optimized Award**.

Other Projects | *HTML, CSS, JavaScript, Python, Gemini, 3JS, FastAPI, AssemblyAI, Blender, Vercel, Bash*
- Developed a voice-controlled **Gemini Chrome Extension** to help visually impaired users navigate the web.
- Created a personal website designed in **Blender**, programmed using **3JS** with React, and deployed on **Vercel**.
- Engineered a voice-controlled wheelchair prototype powered by a **Raspberry Pi Zero**.

Technical Skills

Languages: C/C++, Java, Python, Javascript, TypeScript, HTML/CSS, SQL, Scala, VHDL
Libraries/Frameworks: React, Node.js, Express, Mongoose, Next.JS, FastAPI, SpringBoot, NextJS, 3JS
Developer Tools/Technologies: Git, Linux, Blender, MongoDB, Postman, Docker, Kubernetes, Azure DevOps, Maven, Swagger, OpenAPI