

Derek Gou

226-339-9855 | dgou@uwaterloo.ca | [linkedin.com/in/derek-gou](https://www.linkedin.com/in/derek-gou) | github.com/derekGou | derekgou.com

TECHNICAL SKILLS

Languages: Java, Python, C/C++, TypeScript, Swift, Verilog

Full-Stack & App Development: React, Node.js, Electron, Flask, Firebase, MySQL, SQLite, TailwindCSS

Other Tools: Git, Docker, OpenCV, TensorFlow, Bash, Three.js, Scrapy, Unity, Blender, Inkscape, Figma

EXPERIENCE

Autonomy Team Member

Sep. 2025 – Present

University of Waterloo Aerial Robotics Group

Waterloo, ON

- Developing IMACS ground control system using **TypeScript** and **Python**, implementing real-time **telemetry visualization** and **command routing** for autonomous UAV operations.
- Implemented **Bash automation** to streamline the Hardware-in-the-Loop development workflow on Raspberry Pi.
- Verified code quality via **robust hardware simulations** using **Docker** and **virtual machines**.

🔗 Web Development Lead

Apr. 2024 – Aug. 2025

Children's International Learning Centre

Hamilton, ON

- Delivered **fully responsive, SEO-optimized** website using **ReactJS**, **Vite**, and **TailwindCSS**, delivering a fast, accessible, and modern user experience, driving 12,000+ views in 6 months.
- Collaborated with board members and both technical and non-technical staff in monthly meetings to **align technical development with organizational goals**.
- Increased digital presence and donor engagement, contributing to a **\$10,000+ increase in grant funding** within the first month after launch.

Founder and Director

Sep. 2023 – Aug. 2025

SproutHacks

Waterloo, ON

- **Led** a 12+ member team in hosting a 48-hour hackathon, **securing \$12,000 in sponsorships** to provide free food, resources, and prizes for **80+ students** from across Ontario, and donating 100 meals to local shelters.
- Developed website using TypeScript, React, Tailwind, and Firebase Admin SDK, getting **200+ registrations**.

PROJECTS

🔗 Radiant Browser | *Electron, Chromium, ReactJS, TypeScript, SQLite, Swift, C++, Tailwind*

Feb. 2026

- Developed custom **Chromium-based desktop browser** using **Electron** and **React**, implementing tab management, omnibox search, navigation controls, persistent history, and dynamic shortcut handling.
- **Architected multi-process tab system** using Electron IPC, isolating renderer processes and implementing secure message passing between main and renderer threads.
- Designed **SQLite-backed persistence layer** with IPC-safe access, enabling reliable cross-session management.
- Implemented **lazy renderer initialization**, improving cold-start launch time by 82%.

🔗 ARmatica | *Unity, Flask, ReactJS, Tailwind*

May 2025

- Developed **full-stack system** that converts uploaded breadboard schematics into 3D models via **Flask backend**, enabling real-time AR circuit overlays in **Unity** mobile app.
- Achieved **3rd place** overall at JamHacks 9, Canada's largest high school hackathon (**200+ participants**).

🔗 Swipe | *TensorFlow, Python, Mediapipe, OpenCV, NextJS, TypeScript, Tailwind, ShadCN*

Dec. 2025

- Developed **full-stack slideshow app** to enable users to control slideshows using hand gestures.
- Achieved **98% classification accuracy** across using **custom LSTM-based temporal sequence model**.
- Collaborated in Agile team using **GitLab**, **Kanban** and **Scrum**.

EDUCATION

University of Waterloo: 4.0 Cumulative GPA

Ontario, Canada

Bachelor of Software Engineering with Honours (BSE)

Sep. 2025 – Jun 2030

- President's Scholarship of Distinction, Shad Valley Alumni Entrance Scholarship