

Ryan Qi

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EDUCATION

University of Waterloo

Expected Graduation: Apr 2030

Bachelor of Mathematics - Data Science | **GPA: 3.9/4.0**

PROJECTS

Eco-Pulse (1st Place Overall @ GenAI Genesis) | *Next.js, Python, Gemini* Mar 2026

- Developed an AI urban cooling tool using **Gemini**, automating blueprints and cutting simulation time to **<5s**.
- Built **K-Means** pipeline to detect heat islands with **90%** higher precision than manual methods.
- Integrated physics models to project **CO2 emission savings**, providing stakeholders with a validated **ROI**.

LOCATR (Winner @ DeerHacks V) | *Next.js, FastAPI, LangGraph, Snowflake* Feb 2026

- Engineered a **LangGraph** multi-agent workflow, reducing system latency by **66%** via concurrent execution.
- Developed a venue classification system storing **50+** visual trait embeddings in **Snowflake**.
- Integrated **Auth0** Token Vault for human-in-the-loop security via mobile push approvals.

BlackSwan | *Python, TypeScript, VS Code API, Quantitative Finance* Apr 2026

- Engineered **Python VS Code extension** testing quant models via **Monte Carlo** and adversarial learning.
- Developed debugger API isolating mathematical breaking points, cutting validation time by **40%**.
- Simulated **10,000+** edge-case market scenarios to guarantee high-reliability execution for risk scripts.

FixMyFeed (Finalist @ YHacks) | *TypeScript, Chrome Extension API, NLP* Mar 2026

- Developed a DOM-manipulation engine via **MutationObserver** to intercept and analyze social media content.
- Built an on-device **NLP** pipeline to identify addictive algorithmic patterns with **<50ms** latency.
- Placed as a finalist in **4** categories for designing a privacy-first, serverless browser extension.

ifyShop (Winner @ CxC) | *React, Node.js, Express, MongoDB* Jan 2026

- Built a full-stack e-commerce platform using **React** and **Node.js** for scalable product discovery and checkout.
- Designed REST API and **MongoDB** schema to securely authenticate users and process **500+** mock transactions.
- Implemented dynamic UI state management for cart, decreasing rendering latency by **30%** during active queries.

EXPERIENCE

Mon Sheong Foundation

Toronto, ON

Incoming Software Engineer Intern

May 2026 – Aug 2026

- Preparing to join the engineering team to modernize internal health-tracking systems and infrastructure.

Waterloo Aerial Robotics Group (WARG)

Waterloo, ON

Embedded Flight Software Developer

Sept 2025 – Jan 2026

- Refactored **C++** autonomous flight modules, optimizing memory allocation for custom **UAV** flight controllers.
- Automated **Linux** onboarding and managed **Git** version control for a **15+ person** engineering team.
- Reduced firmware compilation time by **25%** by restructuring header dependencies and the build system.
- Optimized **IMU** processing to eliminate sensor jitter, yielding **95%** signal consistency in autonomous navigation.

Paragon Badminton

Scarborough, ON

Badminton Coach

Feb 2023 – Aug 2025

- Coached **100+** athletes, using match statistics to design drills that boosted regional win rates by **30%**.
- Scaled the competitive program by **3 age divisions** through high-intensity sparring and peer reviews.

TECHNICAL SKILLS

Languages: C++, Python, TypeScript, JavaScript (ES6+), Java, SQL, HTML/CSS, Bash

Frameworks/AI: React, Next.js, FastAPI, LangGraph, PyTorch, NLP, Redis, Tailwind CSS, Pandas, NumPy

Tools/Cloud: AWS (S3, EC2), Snowflake, Docker, Git, Linux, PostgreSQL, MongoDB

Interests: Machine Learning, Quantitative Finance, Badminton, Asian Cuisine