

SEAN YANG

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EDUCATION

University of Waterloo

Bachelor of Software Engineering

Expected May 2029

- **Cumulative GPA:** 4.0/4.0 (Term Distinction awarded 1 of 1 terms)

SKILLS

- **Programming Languages:** C++, Python, Java, JavaScript, TypeScript, Verilog (Hardware Description Language)
- **Frameworks & Technologies:** Git, Agile Methodologies, Linux, React, Next.js, Docker, ROS 2, Tailwind CSS, GraphQL, Flask, SQL
- **Machine Learning:** PyTorch, Jupyter, Time Series Modelling, Predictive Modelling, Model Evaluation & Tuning

EXPERIENCE

Robotics Software Engineer

Sep 2025 – Present

WATonomous (EVE Autonomy) [↗](#)

Waterloo, Ontario

- Developed concurrent robotics software in C++ using **ROS 2** for autonomous vehicle systems
- Built and evaluated rapid-inference **predictive models** for external agent behavior to **reduce safety incidents by 3x**
- Collaborated in a cross-functional team to integrate perception, world modelling, planning, and action nodes
- Implemented unit tests with 100% code coverage to ensure software reliability in real-world scenarios
- Maintained **Docker-based development environments** to support reproducible testing and deployment

Senior Lecturer & Problem Setter

Jun 2023 – Jun 2025

AYJ Coding Club [↗](#)

North York, Ontario

- Led bi-weekly lectures on algorithms and data structures for competitive programming to **50+ high school students**
- Authored original problems and automated C++ **graders** with **250+ total submissions** from students on the club's online judge

PROJECTS

CRusTTY (C Interpreter/Debugger) [↗](#)

Personal Project

Dec 2025 – Present

- Built a **Rust-based C interpreter** from scratch with debugging and memory visualization using a recursive descent parser
- Implemented a **snapshot-based execution engine** enabling bidirectional stepping through program execution history
- Wrote **GitHub Actions** jobs to automate testing and building, preventing regressions and streamlining release management

Wundernn Market State Prediction [↗](#)

Wunderlab ML Challenge

Oct 2025 – Dec 2025

- Designed a **Transformer-based time series model** for noisy financial sequences in **Python** using **PyTorch**
- Outperformed the participant average (0.396 vs 0.309 mean R^2) and placing **top 5% of 3000+ competitors**
- Evaluated sinusoidal vs learnable positional encodings, ultimately combining both to improve long-range dependency capture
- Trained and evaluated models locally on GPU with JupyterLab, iterating on architecture under compute constraints

Bucket (Student Dashboard) [↗](#)

Personal Project

Nov 2025 – Present

- Built and deployed a full-stack student dashboard using React, Next.js, GraphQL (Hasura Engine), and PostgreSQL
- Launched and operated the platform for real users, reaching **40+ monthly active users** with **493+ created resources**
- Designed backend data models and **GraphQL APIs** to support course management, grade tracking, and real-time queries
- Implemented **Google OAuth** authentication and **Dockerized microservices** for local development and deployment

HONORS AND AWARDS

USACO Gold Division Promotion

Issued by USA Computing Olympiad (USACO)

Jan 2026

Certificates of Distinction in the Euclid, CSMC, & CCC (Sr. Div.) Contests

North York, Ontario

Issued by University of Waterloo Centre for Education in Mathematics and Computing (CEMC)

Jun 2025

Computer Science & Chemistry Excellence Awards

North York, Ontario

Issued by A.Y. Jackson Secondary School

Jun 2025