SEAN YANG

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EDUCATION

University of Waterloo
Candidate for 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
- **Frameworks & Technologies**: Git, Linux, React, Next.js, Docker, ROS 2 (Humble), Tailwind CSS, GraphQL, Flask, SQL
- **Machine Learning**: PyTorch, Jupyter, Time Series Modelling, Predictive Modelling, Model Evaluation & Tuning

EXPERIENCE

Robotics Software Engineer, EVE Autonomy Sep 2025 – Present
WATonomous **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

Wundernn Market State Prediction
Wunderlab ML Challenge Oct 2025 – Dec 2025
- Designed a **Transformer-based time series model** for noisy financial sequences
- 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

ezp2p (Peer-to-Peer Multiplayer Games)
Personal Project Dec 2024 – Feb 2025
- Developed browser-based peer-to-peer multiplayer games using **WebRTC Data Channels** with a frontend-first architecture
- Designed a modular networking library in **TypeScript** to abstract peer connections and game state synchronization
- Implemented deterministic game state updates with sequence-based ordering to ensure peer convergence without a central server

HONORS AND AWARDS

USACO Gold Division Promotion
Issued by *USA Computing Olympiad (USACO)* Dec 2025

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

*This document was last updated on 2026-01-23.