

# SEAN YANG

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## EDUCATION

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### University of Waterloo

*Candidate for Bachelor of Software Engineering*

- **Activities:** Watonomous Robotics Engineer, Quizbowl Team

**Waterloo, Ontario**

Sep 2025 – May 2030 (expected)

## LEADERSHIP AND ACTIVITIES

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### WATonomous

*Robotics Software Engineer*

- Developing concurrent software for an autonomous vehicle using **ROS 2** and **C++ (rclcpp)**
- Designing and testing **predictive modelling systems** for external agent behaviour to enhance vehicle safety
- Collaborating with a multidisciplinary team to integrate software with hardware components
- Utilized and maintained **Docker containerization** for streamlined development and deployment

**Waterloo, Ontario**

Sep 2025 – Present

### AYJ Coding Club

*Senior Lecturer & Problem Setter*

- Led bi-weekly lectures on advanced programming topics including recursion, dynamic programming, graph algorithms, and trees
- Authored original language-agnostic programming problems with **250+ total submissions** from students on <https://ayjcoding.club/>
- Implemented custom graders in C++ to support automated evaluation of problems on the club's online judge
- Mentored junior members in algorithm design and problem-solving strategies

**North York, Ontario**

Jun 2024 – Jun 2025

## PROJECTS

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### seanyang.me

*Personal Project*

- Built and deployed a personal portfolio website from scratch using Tailwind CSS, React, and Next.js
- Integrated a self-hosted Flask backend to serve dynamic content and manage rate limiting
- Designed UI/UX independently, achieving a **100/100 accessibility score** on Google Lighthouse
- Deployed with Netlify CI/CD, custom domain, and HTTPS; reached **1.04k unique visitors** in the last 30 days

Feb 2025 – Present

### aicheye's Combat Tagging

*Personal Project*

- Developed a Minecraft mod (700 LOC, 10 classes) in Java with Gradle to enhance default combat mechanics
- Applied OOP design, event handling, and resource management to ensure stable performance on hardware-limited servers
- Iterated on features based on community feedback, reaching **510+ downloads** worldwide on Modrinth

Mar 2025 – Present

### Quoridor

*A.Y. Jackson Secondary School*

- Implemented the full strategy game Quoridor in Java (1.7k LOC, 5 classes) as a solo project
- Designed a minimax-based game agent and improved runtime by **100x** using alpha-beta pruning and transposition caching
- Developed pathfinding algorithms and heuristic ordering to strengthen AI move selection
- Documented all classes with Javadocs to ensure maintainability and clarity

May 2024 – Jun 2024

## HONORS AND AWARDS

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

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

- Achieved top 25% nationally across multiple mathematics and programming contests

**North York, Ontario**

Jun 2025

### Computer Science & Chemistry Excellence Awards

Issued by *A.Y. Jackson Secondary School*

- Recognized among top students in Computer Science and Chemistry over four years of study

**North York, Ontario**

Jun 2025

## SKILLS, LANGUAGES, INTERESTS

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- **Soft Skills:** Problem Solving, Critical Thinking, Leadership, Conflict Resolution
- **Programming:** Java/Kotlin, C/C++, Python, JavaScript, Tailwind CSS, React, Next.js, ROS 2, LaTeX, Flask, Bash/Shell Scripting
- **Tools:** Unix/Unix-like Systems (Linux), Git, CI/CD, Docker, Overleaf, Figma, Foxglove Studio, GitHub Actions, MySQL
- **Interests:** Films, Political Philosophy, Swimming, Biking, Trivia