SEAN YANG

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EDUCATION

University of Waterloo **Waterloo, Ontario**
Candidate for Bachelor of Software Engineering Sep 2025 – May 2030 (expected)
- **Activities**: Watonomous Robotics Engineer, Quizbowl Team

LEADERSHIP AND ACTIVITIES

WATonomous **Waterloo, Ontario**
Robotics Software Engineer Sep 2025 – Present
- 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

AYJ Coding Club **North York, Ontario**
Senior Lecturer & Problem Setter Jun 2024 – Jun 2025
- 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

PROJECTS

Wundernn Market State Prediction
Wunderlab ML Challenge Oct 2025 – Dec 2025
- Developed a Transformer-based sequence model for market state forecasting, achieving **0.396 mean R^2 score** across 32 features
- Implemented advanced positional encoding and multi-head self-attention with residual connections for robust temporal modeling
- Optimized for 1000-step sequences with proper warm-up period handling and trained on GPU with early stopping

aicheye's Combat Tagging
Personal Project Mar 2025 – Present
- 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 **610+ downloads** worldwide on Modrinth

seanyang.me
Personal Project Feb 2025 – Present
- 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

HONORS AND AWARDS

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

Computer Science & Chemistry Excellence Awards **North York, Ontario**
Issued by *A.Y. Jackson Secondary School* Jun 2025
- Recognized among top students in Computer Science and Chemistry over four years of study

SKILLS, LANGUAGES, INTERESTS

- **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
- **Machine Learning**: PyTorch, Transformer Architectures, Deep Learning, NumPy, Pandas, scikit-learn
- **Tools**: Unix/Unix-like Systems (Linux), Git, CI/CD, Docker, GitHub Actions
- **Interests**: Films, Political Philosophy, Swimming, Biking, Trivia