

Sean Zhao

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EDUCATION

University of Toronto

Toronto, ON

Bachelor of Applied Science in Computer Engineering + PEY Co-op

Sept. 2025 – April 2030

- Relevant Coursework: Calculus I (MAT186), Linear Algebra (MAT188), Engineering Studies and Practices 1 (APS111)
- Current Coursework (Winter '26): Computer Fundamentals (APS105), Calculus II (MAT187), Electrical Fundamentals (ECE110), Engineering Studies and Practices 2 (APS112)
- Cumulative GPA: 3.94/4.00

William Lyon Mackenzie Collegiate Institute

Toronto, ON

MaCS Program Graduate - Specialized Math and Computer Science Program

Sept. 2021 – June 2025

- Relevant Coursework: Computer Science (AP Enriched), Computer Engineering Technology, Robotics

PROJECTS

Patchy | React, TypeScript, Express.js, GitHub API, Vellum, OpenAI API

July 2025

- **Won "Best App Made with Vellum" at Hack the 6ix 2025** – AI tool that scans codebases for security vulnerabilities and suggests fixes
- Built the backend with GitHub API integration to analyze repositories and auto-generate pull requests with security patches
- Designed AI agent workflows with Vellum and OpenAI, reducing analysis time from 6+ minutes to under a minute, and improving vulnerability detection and fixing accuracy

Wanderlust | Express.js, React.js, Gemini AI, MongoDB, Auth0, Amadeus API

August 2024

- Built a travel planning app for the Gemini AI Developer Competition that generates personalized itineraries from user preferences
- Integrated Gemini AI with careful prompt engineering to output structured JSON, with Auth0 authentication and MongoDB storage
- Connected Geocoding and Amadeus APIs to provide real hotel recommendations and interactive maps

Cursequence | Unity, C#, Unity Cloud

May 2025

- **Won "Best Game Overall" at Counterspell 2025** – a card battler where you fight against your past self
- Designed the full combat system: hand management, attack logic, status effects, and deck-building mechanics
- Implemented visual effects and animations, coordinated team workflow using Unity Cloud version control

Silyntax | React, Flask, OpenCV, MediaPipe, SciKit, Tailwind CSS

Jan. 2024

- **Top 10 at Deltahacks X** – gamified sign language learning app with real-time webcam feedback
- Built gesture recognition pipeline with OpenCV and MediaPipe to detect hand signs and score accuracy
- Connected React frontend to Flask backend for real-time ML inference and user feedback

Screentime Showdown | React, Express.js, Prisma, Paybilt, Meta API, Cohere

Oct. 2023

- **Won "Best Financial Hack" at Hack the Valley 8** – social media detox app where users wager money on staying offline
- Integrated Paybilt for payments and Meta API to track real-time screen usage
- Used Cohere to generate personalized accountability messages when users cave

Please Help Me Study! | React, Express.js, Vertex AI, Gemini Pro, Docker, GCP

Jan. 2024

- **Won "Best Domain Name" at GDSC Hacks 2024** – Chrome extension that uses AI to detect and block distracting websites, with custom generated study problems if users want to unblock the site
- Used Gemini Pro to analyze website content in real-time and determine distraction levels
- Deployed containerized backend on Google Cloud Platform with Caddy for reverse proxying

Chrono Crusader | Unity, C#, Aseprite

Dec. 2023

- Built a time-travel platformer in 4 days for the Holiday Game Jam
- Implemented physics, platform-shifting mechanics, and particle effects in Unity
- Created original pixel art in Aseprite and integrated dynamic audio systems

The Shutter | Unity, C#

July 2024

- Built a first-person horror puzzle game for Pizza Jam – navigate dark rooms using only a camera flash
- Created custom 3D models, designed puzzle mechanics, and implemented atmospheric sound design

EXPERIENCE

Sales Representative & Swim Instructor

Olympian Swimming

July 2023 – November 2024

Toronto, ON

- Advised customers on swim gear and equipment, managed inventory, and maintained shop operations during peak hours
- Taught swimming lessons to students of all ages and skill levels, from beginners to competitive swimmers
- Developed strong client relationships, contributing to customer retention and student progression

Cybersecurity Club President

William Lyon Mackenzie C.I.

September 2024 – June 2025

Toronto, ON

- Organized CyberPatriot prep sessions and cross-school CTF competitions, growing the club to 100+ members
- Led weekly workshops on network security, cryptography, and ethical hacking fundamentals
- Guided the team to 1st place at CyberTitan Nationals, Canada's youth cybersecurity competition

Web Development Club President

William Lyon Mackenzie C.I.

September 2024 – June 2025

Toronto, ON

- Founded the club and grew it to 50+ members, running workshops from HTML/CSS basics to React
- Organized hackathon showcases and code golf competitions to give members hands-on experience
- Led trips to local hackathons where members won multiple awards

AWARDS & ACHIEVEMENTS

CyberTitan National Champions: 1st Place Overall, Canada's national youth cybersecurity competition (May 2025)

CyberPatriot National Finals 2025: Award Winner, Cisco 2nd Place, 6th Overall (March 2025)

CCC: CCC Junior 2023 Perfect Score, CCC Senior 2024 and 2025 Distinction

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, Java, C/C++, HTML/CSS

Frameworks & Libraries: React, Node.js, Express.js, Tailwind CSS, NumPy, Matplotlib

AI & APIs: OpenAI API, Gemini AI, Vellum, GitHub API, Amadeus API, Geocoding API, Mapbox API

Databases & Auth: MongoDB, Auth0

Cloud & Infrastructure: Oracle Cloud, Nginx, Docker, Google Cloud Platform, Vercel

Developer Tools: Git, VS Code, Unity, Google AI Studio