Ethan Gan

https://ethangan.netlify.app/
647-807-7932 e3gan@uwaterloo.ca linkedin.com/in/ethan-x-gan github.com/Ethan-Gan

Education

University of Waterloo Expected 2029
Bachelor of Applied Science in Systems Design Engineering, Honours *Waterloo, ON*

- **Cumulative average: 89%**
- **Awards**: President's Scholarship of Distinction (2024), TELUS Entrance Scholarship (2024)
- **Relevant Coursework:** Data Structures and Algorithms (*C++, GitLab*), Visualization (*SolidWorks/CAD*), Digital Systems (*Falstad Circuit Simulation*), Linear Algebra (*MATLAB*), Human Factors and Design (*Human Factors and Design Process*)

Skills

Languages: Python, Java, JavaScript, C++, Arduino C, SQL
Web Development: React.js, HTML, CSS, Markdown, GitHub Pages, Netlify
Tools & Platforms: Git, GitHub, GitLab, Bash, VS Code, Figma, Anaconda, Azure
Certifications: Microsoft Azure AI Fundamentals, Microsoft Azure Fundamentals, TCPS 2: CORE-2022, WHMIS 2015

Experience

Firmware and Electrical Team Member May 2025 – Present
Midnight Sun Solar Rayce Car Team *Waterloo, ON*

- The University of Waterloo's solar-powered endurance race car team competing at the American and World Solar Challenge.
- Implemented a **driver control state machine** in **C** on **FreeRTOS** and wrote **unit tests**, and used **Vagrant** for consistent development.
- Collaborated with various subteams to troubleshoot integration problems.

Team Lead Jan 2025 – Apr 2025
WE Accelerate - Microsoft Division *Waterloo, ON*

- Lead the **product design for a conceptual AI-powered fraud prevention tool** for seniors.
- Collaborated with a 5-person team to create and present a functional design proposal **that earned the top score** and was requested as a model for future teams.
- Created **UX flow diagrams and wireframes** illustrating interactions with tools such as **Azure AI Foundry and Azure AI Search**.

Science and Technology Education Instructor Feb 2023 – May 2025
Principal Academy *Vaughan, ON*

- Designed and taught a week-long project-based curriculum for **Python, Java and Scratch** for capacities of **20+ students of grades 4-12 for the Summer Coding Camp**.
- Applied Adobe Creative Cloud to optimize UX, branding, logo design and multimedia content creation and promotional campaigns of **up to 10% conversion rate.**

Coding Contest Manager Sept 2023 – June 2024
Thornhill Secondary School Computer Club *Thornhill, ON*

- Led a team of students to launch coding contests on graph theory and other concepts for **50+ participants**.
- Built **automated input/output test suites** to streamline problem submission evaluation, **reducing manual workload by 99%**.

Council President Sept 2023 — June 2024
Thornhill Secondary School Music Council *Thornhill, ON*

- Coordinated and supervised a team of **60+ members** to organize school-wide concerts and events for **200+ attendees**.
- Developed **Python** scripts for automating Music Soulmates matchmaking process **saving 30 minutes of time per entry**.
- **Awarded Marilyn Short Excellence** award for exceptional contributions to music.

Projects

Portfolio Website | *React, JavaScript, React Router, CSS, HTML, Markdown, Netlify*

- Built a responsive, modular **React** website featuring dynamic project showcases with a **Markdown** article system.
- Achieved Lighthouse scores of **92 (Performance)**, **95 (Accessibility)**, and **100 (Best Practices)** through code splitting and semantic HTML.

TankRunners: Procedural Tank Game | *Java, JFrame, JPanel, OOP*

- Developed a **procedurally generated dungeon adventure game** featuring adaptive AI enemies and dynamic map generation.
- Built adaptive enemy AI utilizing weighted randomness for decision-making and A* pathfinding for optimized navigation, reducing resource load and enhancing gameplay fluidity.

WalkAlong Hovercraft | *Arduino C, SketchUp, TinkerCAD, 3D Printing & Design, Servo/Motors*

- Built a functional **1/32 scale hovercraft** to demonstrate airflow and Bernoulli's principle.
- Used **Arduino C** to communicate rudder movements and motor intensity through a remote receiver, **SketchUp** for drafting 3D designs, and **TinkerCAD** for 3D printing.