Finn Cullen

US - Canadian Dual Citizen

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EDUCATION

- **University of Waterloo** — Waterloo, ON, Canada
  Bachelors of Software Engineering - 3.93 GPA — *Sept. 2024 – Present*
- **Glenlyon Norfolk High School (International Baccalaureate Program)** — Victoria, BC, Canada
  99% average in STEM subjects - 95% Overall - Final Grade: 38 IB — *Sept. 2020 – July. 2024*

SKILLS

- **Languages**: JavaScript, Java, Python, C, C++, C#, TypeScript, CSS, HTML, Bash
- **Frameworks**: React, Spring, SQL, FastAPI, Git, Docker, Firebase, Flask, AWS, Unity, ROS, Latex, SolidWorks
- **Other Skills**: UI/UX, Circuit Design, 3D Modeling, Engineering Schematic Creation, Soldering, Bread-Boarding

PROJECTS

- **Debug Debacle**: Multiplayer online competitive coding, users compete to correct bugs in code fastest. Won 3rd place at MCHacks 2025. Uses React for front-end, Flask for back-end, as well as generative AI workflows in with Gumloops-API and web-hooks for generating and validating unique problem sets and test cases for each game instance. Link
- **Personal Website**: Portfolio website built in React with Tailwind CSS and GitHub Pages. Features interactive background animation and lazy image loading for smoother user experience. Link
- **Thyone Consulting**: Freelance web design work for Thyone Consulting group, developing and deploying company website. Built in React and integrating a Headless CMS to allow client updates. Link
- **3D Graphics Engine**: Custom Python based 3D graphics environment. Features OBJ file support and real-time quaternion-based camera movement. Graphics algorithms include hidden face occlusion and dithered shading
- **FATChess**: Chess engine and AI created without external chess libraries. Written in C# with Unity for UI. AI uses Min-Max search with alpha-beta pruning. Learned about game-dev, AI development, and front end design
- **PathMaxer**: Tour guide robot which takes a schedule uploaded from a Bluetooth integrated smartphone app and autonomously leads users between their classes on campus. Coded using Robot OS, Raspberry Pi, C/C++, React Native, Expo. Uses Dijkstra's algorithm for path finding and image processing for object avoidance
- **Omni-Directional Rover**: Robot controllable wirelessly through a web server. Using ESP32 and 3D printed self assembled Mecanum wheels. Interacts dynamically with onboard LED display. Developed at Microbots Hackathon 2024

RELEVANT EXPERIENCE

- **Cavalry Fence** — Edmonton, AB, Canada
  Full Stack Software Developer — *May 2025 - Present*
  - Independently developed and brought to production a web-based B2B service for planning fencing jobs, calculating material lists, formatting quotes, and receiving payments from homeowners.
  - Front-end development in JavaScript with React, backend in Java with Spring. Integrated with Firebase, Mapbox GL, Stripe Connect, and Email services.

- **University of Waterloo Orbital** — Waterloo, ON, Canada
  Firmware Team Member — *Sept 2024 - Present*
  - Implemented Doppler effect correction algorithms for ground station to satellite communications
  - Back-end work using Python and FastAPI, and firmware programming, using RTOS and HIL concepts

- **MiNa Labs - Engineering and Computer Science - University of Victoria** — Victoria, BC, Canada
  Microfluidics and Nanotechnology Engineering Research Assistant and Tech Services — *July 2023 - Sept 2023*
  - Designed and deployed hardware and software systems to improve lab efficiency and safety
  - Gained experience in SolidWorks and Fritzing for CAD and producing physical components and circuits

OTHER ACHIEVEMENTS

- **Hackathons**: 2nd place at UTRA Hacks 2025 (150+ teams), 3rd place at MCHacks 2025 (200+ teams)
- **CanHack**: Team leader for CanHack CTF coding competition team. Led team in solves and mentored new students
- **Waterloo Math Competitions**: Certificates of distinction earned for all competitions since 2018