Diego Ciudad Real Escalante

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Education

Bachelor of Applied Science in Electrical Engineering +PEY Co-op Minor in Artificial Intelligence
GPA: 3.06/4.0 *University of Toronto Class of 2026*

Relevant Courses

Digital Systems, Programming in C/C++, Operating Systems, Probability, Algorithms and Data Structures, Engineering Economics, Computer Organization, Software Communication and Design, Signals and Systems.

Skills & Interests

Hard Skills: Linux, Bash, C/C++, Python, Git, Docker, Python, Embedded Systems, Altium, Algorithm Optimization

Soft Skills: Communication, Research, Organization, Teamwork, Adaptability, Problem Solving, Conflict Resolution.

Interests: Open Source Software, FPGA Design, System Administration, Artificial Intelligence, Operating Systems.

Experience

Firefox Contributor Sep. 2024 – Present
University of Toronto Open Source Society (UTOSS) *Toronto, ON*

- Contributed to Firefox development by fixing three bugs using the C++ and Markdown Languages. The code was revised and accepted by Mozilla.
- Assisted fellow members in setting up development environments for Firefox, discussing cross-platform setup differences and operating system-specific requirements
- Help maintain a progress-tracking system using Google Sheets to monitor member contributions and project milestones, improving the record-keeping of the club
- Currently developing a custom Firefox extension to further contribute to the open-source community.

Summer Research Fellow May. 2024 – Aug. 2024
University of Toronto *Toronto, ON*

- Researched and sourced industry-grade components for redesigning a power IGBT driver board with over 300 components, optimizing part selection with Altium and phasing out obsolete components
- Led workshops for 30+ second-year engineering students, teaching essential skills in CAD design, microprocessor programming, and advanced circuit prototyping.
- Revised and updated 20 lab manuals for four courses by thoroughly reviewing technical documentation for electrical engineering lab equipment. The lab documents are used by over than 500 students.

Web Developer Jul. 2023 – Aug. 2023
Nimbus Digital Transformations *San Salvador, ELSL*

- Developed and integrated Create, Read, and Update operations for seamless data management in an Amazon Web Services (AWS) backend.
- Designed and implemented dynamic, responsive HTML/CSS components in Figma, ensuring smooth adaptability across devices and screen sizes.
- Collaborated in weekly Agile sprints, consistently presenting progress on AWS integration, React development, responsive design, and version control with Git.

Projects

unfairUndyne Feb. 2024 – Apr. 2024
Check it out here: https://github.com/DCR194/unfairUndyne

- Engineered drivers to support 60fps animations and 8KHz audio on a 120MHz soft processor, optimizing performance.
- Coordinated with teammates using Git and best coding practices, maintaining a clean, modular codebase.
- Developed a detailed project plan for structuring game assets, logic, and workflow, delegating tasks and managing timelines for a polished final product.
- Authored thorough, consistent documentation for all major functions in the finalized code directory to ensure clarity and future maintainability.

SuperStar GIS Jan. 2024 – Apr. 2024

- Build a Linux application with the GTK graphics library and styled the application with CSS to develop a responsive, user-friendly GUI for smooth interaction and animations of up to 30fps.
- Processed OpenStreetMap data in C++ and built a fully functional Geographic Information System (GIS) that can display the over 200 million street segments in the database.
- Integrated real-time weather updates using WeatherAPI, displaying visibility conditions for specific cities
- Create testing metrics for C++ code to analyze the most demanding functions, and guarantee memory safety.
- Enhanced pathfinding algorithms to deliver optimized solutions to the traveling salesman problem.

Home Server Jul. 2024 – Present

- Host a Debian-based system accessible remotely via Secure Shell (SSH) or Virtual Network Computing (VNC) for efficient system management.
- Develop a responsive personal website with the React framework, Javascript, HTML, and CSS. Deployed the website with Cloudflare and Nginx.
- Offloaded resource-intensive Python scripts, including PyTorch-based haiku generation models and web scrapers, to a remote environment, achieving 2-3x faster execution and optimizing workflow efficiency.
- Refurbished older hardware to create a high-performance, cost-effective home lab, reducing electricity costs to just $2.18/month.