Adam Sidat

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TECHNICAL SKILLS

Programming: C/C++, MATLAB, Java, JavaScript, HTML/CSS, Node.js, Python, C#, G-code, SQL, Git, Bash
Electrical: PCB Design, Microcontroller Programming, Circuit Design, Digital Electronics, Embedded Systems
Mechanical: SolidWorks, AutoCAD, GD&T, Technical/Engineering Drawings, DFMA, Finite Element Analysis
Manufacturing: 3D Printing, Laser Cutting, Manual Machining, Mill, Lathe, CNC, MasterCAM, Soldering

WORK EXPERIENCE

Lead C++ Developer
Sep 2024 – Present

diep.io
Remote

- Led the development of the MMO game diep.io, working with C++, Node.js, TypeScript, and React to develop all aspects of the game, including frontend, backend, and server management. **Reduced operating costs by over 80%** when compared to the previous hosting provider.
- Created a custom server management software leveraging web technologies such as Express, SQL, React, EJS, nginx, and interacting directly with Cloudflare, Vultr, OVH, and GitHub APIs for completely **automatic load-balancing across 4 continents**.
- Oversaw the work of **two other developers**, using Git to work collaboratively, and communicated with advertisement providers, game hosting sites, and content creators to find and create promotional opportunities.

Test Engineering Intern
Jan 2025 – May 2025

Amphenol Canada Corp.
Markham, ON

- Developed **Qualification Test Procedures (QTPs)** for customer-specific requirements, ensuring **compliance with standards** such as IEC 60529 (IPxx), EIA-364, IEEE, RoHS, and others – providing certification for high-reliability Ethernet, power connectors, and industrial lighting fixtures.
- Conducted environmental, mechanical, and electrical testing, including IPxx, IKxx, DWV-IR, LLCR, using equipment such as Espec thermal shock chambers, Mark-10 force gauges, Instron testers, XRF spectrometers, and hi-pot testers, **reducing test cycle time by 75%** through optimized sequencing and setup.
- Improved efficiency of a CAD database migration project by implementing custom scripts in PowerShell and Batch, cutting manual data entry time by **over 80 hours**.

Automation Engineering Intern
Aug 2023 – Jan 2024

Toronto District School Board
Toronto, ON

- Designed and implemented a new energy-efficient HVAC controller suite consisting of 25 programs (made using WebCTRL and enteliWEB) regarding the command and monitoring of HVAC equipment (dampers, boilers, generators, compressors), which control the operation of **over 300 facilities**. The initiative achieved an overall **efficiency gain of 35%.**
- Produced and programmed a web application allowing maintenance personnel to efficiently view the operating state of hundreds of facilities. By virtually **eliminating fault diagnosis time**, the project is expected to **save tens of thousands of dollars** annually.
- Developed a web application to store, maintain, and update live data of **over 600 facilities**, **reducing access time by 50%** and allowing engineering records to be easily and securely shared across companies.

Solar Engineering Intern
Dec 2022 – Apr 2023

Guelph Solar Mechanical Inc.
Guelph, ON

- Engineered and optimized solar PV system layouts and configurations for residential and commercial clients using simulation software (PVsyst), ensuring **maximum energy production and efficiency**. Commissioned the systems and achieved an average annual **power expense reduction of over 55%**.
- Implemented monitoring and diagnostic tools (SolarEdge) to track the performance of **over 50 solar PV systems**. By analyzing data and identifying opportunities for optimization and troubleshooting, the project **increased the efficiency of existing systems by 20%**.

EDUCATION

University of Waterloo
Sep 2022 – Present

Candidate for BASc in Mechanical Engineering
Waterloo, ON

- **1st Place** in Sandford Fleming Foundation Engineering Competition, July 2023
- Cumulative **GPA of 3.90/4.00**

Personal Projects

Custom C Compiler | *C++, Assembly, Lexing, Parsing, Compiler Design, Optimization*   Feb 2023 – Mar 2023
- Designed and implemented a **recursive descent parser** capable of parsing C code **5 times faster** than GCC.
- Leveraged industry-standard **code optimization** techniques to generate fast-executing and efficient assembly.
- Utilized a test suite consisting of **200 test cases** to maintain consistent, **standards-compliant** output.

CNC Plotter | *C++, Closed-Loop Control, SolidWorks, Mechanical Design*   May 2023 – Sep 2023
- Constructed a **50-part assembly** in SolidWorks and drafted technical drawings following GD&T standards.
- Programmed a **closed-loop control system** in C++, achieving precise plotting with 0.1 mm (4 thou) precision.
- Fabricated custom steel, aluminum, and acrylic parts through manual **machining**, laser cutting, and 3D printing.

Precision Machined Pocket Lighter | *Turning, Boring, Milling, Drilling, Tapping*   Feb 2023 – Mar 2023
- Utilized **SolidWorks** and **AutoCAD** to design a unique, custom pocket lighter consisting of 8 parts.
- Machined the lighter using manual **machining techniques**, following DFMA principles.

Persistence of Vision Clock | *PCB Design, Microcontrollers, Digital Circuits, C++*   Nov 2022 – Jan 2023
- Devised and **manufactured a 2-layer PCB** (using Eagle) designed around an 8-bit Atmel microcontroller.
- Integrated an array of 40 LEDs and a DC motor with a **variety of sensors** to maintain stability at high speed.