Adam Sidat

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TECHNICAL SKILLS

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

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**

EXPERIENCE

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% and a projected annual **cost reduction exceeding $3,000,000.**
- 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 using React and Node.js 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.
- Drafted and maintained detailed installation plans and documentation for 5 new projects, including **equipment layouts**, **wiring diagrams**, and system configurations, facilitating smooth and consistent project execution and enabling ease of future maintenance.

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%**.
- Created comprehensive **engineering drawings**, schematics, and specifications (AutoCAD) for 20 photovoltaic projects. By incorporating site-specific requirements and local building codes, ensured that all completed projects passed electrical inspections and earned safety certifications.

PROJECTS

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 complex parts.
- Machined the lighter from 360 brass and 6061 aluminum stock using manual **machining techniques**.
- Incorporated DFMA design principles to **minimize manufacturing operations** and tool changes.

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 Atmel microcontroller.
- Integrated an array of 40 LEDs and a DC motor with a **variety of sensors** to maintain stability at high speed.