LUCAS CRASTON

Computer Systems Engineering at Carleton University

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SELF FUNDED PROJECTS

Lab Equipment Automation

Winter 2021–Present

- Designing **Python** scripts to automate the use of lab gear such as **oscilloscopes** and **power supply's**, allowing users to cycle and test batteries up to **50 percent** faster
- Using **NI-VISA** as a back end to send **SCPI** commands to the instruments, allowing users to set custom trigger and channel options remotely
- Analyzing incoming measurement data and plotting it in **MATLAB** for easy examination

IPhone, Android, Laptop and PC Repair

2018–Present

- Troubleshooting Apple, Windows, and Android devices to find the most cost effective repair and replace all serviceable components
- Reducing electronic waste by fixing **100 percent** of devices to date and selling them for a profit

Homemade Radio Transceiver

Fall 2021

- Created a radio receiver and transmitter controlled by a **Microcontroller** with a range of 1100m to use in drones and RC cars for land surveillance
- Designed, assembled, and tested a **PCB** from scratch to reduce size and improve the usability of the product

Off Grid Irrigation System

Summer 2021

- Installed a rain water collection system that uses solar power to drip irrigate a half acre of plants to reduce water waste by **80 percent**
- Built and programmed a smart garden timer that manages the distribution of water and nutrients to plants, allowing users to automate their garden

Arduino Temperature and Humidity Shield

Spring 2021

- Designed and assembled an Arduino Uno **PCB shield** that uses LEDs to display the temperature and humidity
- Programmed the Arduino Uno using **C++** to read the sensor values and relay the information to the display

EDUCATION

- Bachelors of **Computer Systems Engineering**
- COOP student: available **4 months**, full time starting summer 2022
- Deans list with 10.25/12 GPA
- Entry level scholarship

EXPERIENCE

Hardware Engineer

Ford Motor Company

May 2022 – August 2022 | Ottawa, CA

- Designed, tested, and characterized DC-DC power supplies and power delivery systems for the new FNV and SYNC platforms
- Performed worst-case circuit-analysis on power electronics to verify components for new designs

Computer Sales Advisor

Best Buy

Oct 2019 – Oct 2020 | Ottawa, CA

- Provided accurate and economical hardware and software recommendations to clients by remaining up-to-date on new hardware and software releases
- Developed persuasive communication skills by providing exceptional customer service which resulted in being one of the top part-time sales advisors with over **$1000/hour** average sales

Owner

Craston's Yardworks, Lawn & Yard Care Services

2014–Present | Ottawa,CA

- Building a small business to generate income and learn basic management and communication skills
- Providing lawn care and landscaping maintenance for over 10 clients on an ongoing basis
- Expanding my business and learning new entrepreneurial skills by interacting and engaging with my community

TRANSFERABLE SKILLS

- Leveraged my fantastic interpersonal skills and bilingualism to proficiently communicate with clients and teams members to complete tasks and meet objectives.
- Developed excellent problem solving skills to effectively test and measure circuits with equipment such as oscilloscopes, multi-meters, and power supplies.
- Solved **C/C++** and **Python** programming problems to implement new embedded systems designs.
- Created a passion for engineering and electronics by pursuing my own projects and taking initiative on implementing and completing goals.
- Developed versatile set of skills by working independently and in groups, allowing me to be an asset to any team or handle individual assignments.
- Experience with **Linux**, **LaTex**, and **Git** for version control.
- **Relevant courses:** Circuits and Signals (DC, AC, and transient circuit analysis), Imperative programming (C, structures, GO language), Digital Systems (Design and analysis of combinational and sequential logic circuits).