

# LANE MCMARTIN

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## TECHNICAL SKILLS

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- **Programming:** C, Python, C++, MATLAB, VHDL, Git, Assembly.
- **Software:** Altium, KiCAD, LabVIEW, LTSpice, Atmel Studio, Xilinx Vivado, Jira, Microsoft Office Suite, Photoshop.
- **Tools:** Logic Analyzer, Oscilloscope, DMM, Soldering, Function Generators.
- Experience with ARM Cortex-M, HDL, and AVR programming, digital signal processing, and embedded system design.

## EDUCATION

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### Bachelor of Science in Electrical Engineering (with Distinction)

University of Alberta • Edmonton, AB

Fall 2017 – April 2021

GPA: 3.8

## EMPLOYMENT HISTORY

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### Test Engineer (E.I.T)

Profire Energy • Acheson, AB

May 2021 – Present

- Developed, maintained, and improved custom test hardware and software through Altium PCB layout, LabVIEW programming, Python scripting, and extensive documentation writing. These tools are used daily for 100% product testing.
- Created an in-house application to generate and track product serial numbers; utilizing skills in database creation, UI/UX design, and FileMaker scripting. This tool is used frequently by the Quality-Control team.
- Collaborated to resolve supply-chain challenges through identifying and recommending suitable alternate components.
- Provided tech-support and troubleshooting services to customers – testing defective hardware with lab equipment.

### Electrical and Mechanical Assembler

Powell • Acheson, AB

May 2019 – August 2019

- Assembled and wired switchgear products from CAD models and electrical diagrams, exercising a high degree of safety.
- Conducted electrical quality-assurance corrections including insulation, continuity, and functionality testing.

## PROJECTS AND EXTRACURRICULAR EXPERIENCE

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### Game Development Project (HackED 2022)

January 2022

- Collaborated with a team to create a PC game in Unity over a 24-hour period – learning C# and exercising creative skills.

### Wearable Health Monitor Capstone Project

September 2020 – April 2021

- Designed a health monitor for the tracking of heart rate, blood oxygen, and skin temperature.
- Collaborated within a team to draft an electrical schematic in KiCAD integrating the client's own processor into the design.
- Worked with C++, MATLAB, and the client-owned cross-compiler to write the firmware for the onboard processor.
- Wrote detailed documentation regarding the design rationale, construction, and operation of the device.

### University of Texas Online Embedded Systems Course

May 2020 – August 2020

- Strengthened embedded system knowledge through ARM Cortex-M4F TM4C123x microcontroller-based coursework.
- Developed experience building projects incorporating an LCD SPI display, 4-bit DAC audio output, and ADC inputs.

### Autonomous Robotic Vehicle Project Team Member

September 2018 – May 2019

- Cooperated in a multidisciplinary team to construct a submersible robot controlled by artificial intelligence.
- Designed a leak sensor PCB using Autodesk EAGLE – soldering, assembling, and evaluating the finished board.

### Harvard CS50: Introduction to Computer Science

July 2018 – August 2018

- Finished online coursework on C, Python, SQL, JavaScript, and HTML with a final grade of 98%.
- Wrote a fitness tracking and workout sharing website with Python, SQL, and HTML/CSS for the final project.