**aEfren Jr. Fernandez**

587-566-8573 |



efrenuyfernandez@gmail.com

|



[https://www.linkedin.com/in/efren-jr](https://www.linkedin.com/in/efren-jr/)

[/](https://www.linkedin.com/in/efren-jr/)

# Education

## University of Alberta *Edmonton, Canada*

*BSc. in Electrical Engineering Co-op September 2018 - May 2023*

*Courses: Embedded Systems Design • Power Electronics • Biophysical Measurements and Instrumentation • Digital Electronics • Data Analysis and Machine learning • Medical Robotics • Micro-fabrication Devices*

# Skills Summary

* **Languages**: Embedded C/C, Python, LaTeX, Matlab, HTML
* **Software Tools**: Altium, KiCAD, Git, SolidWorks, Visual Studio, nRF Connect, Cadence, MS Office, LTspice
* **Tools**: Oscilloscope, Signal generator, Soldering, Reflow Oven, PCB Mill, FDM/Resin 3D printers
* **Hardware**: Nordic 52840, STM32, ESP32, Arduino, Teensy, Atmel
* **Other**: Familiar with Agile Scrum Methodology, Fluent in Tagalog, Basketball player, Willing to relocate

Experience

## Element 4

*IoT Developer, Research and Development April 2021 - August 2022*

* Designed, validated, improved, and assembled a working schematic and **PCB design**
* Built, tested and verified experimental results on board/part modifications
* Conducted research on the application of various harvesting techniques for low power IoT applications
* Researched and developed small scale manufacturing process plans
* Collaborated with third parties on the case design and fabrication
* Promoted and represented the company in networking events

## University of Alberta

*AR Curriculum Developer January 2021 - April 2021*

* Developed examples which utilized augmented reality to help students in remote learning
* Created marker and marker-less AR examples to help student visualize complex concepts that may be hard to view in a traditional image
* Used HTML to develop a web page to display AR examples
* Designed CAD models using **Solidworks and Blender** for the AR examples
* Researched the applications of AR in classroom settings for an academic paper

## Alberta Computers for Schools

*Computer Repair Technician May 2020 - August 2020*

* Increased production by 25% within the first month joining
* Developed new refurbishing protocols and created a new user guide to onboard new members
* Learned basic warehouse shipping and receiving skills
* Developed excellent leadership and communication skills through supervising the team

# Projects

## Catalytic Converter Deterrent Device

*Personal Project October 2022 - Present*

* Designed the schematics for a low power BLE device to track catalytic theft
* Developed firmware to integrate theft detection and BLE communication • Made use of Zephyr RTOS to schedule and manage tasks in the firmware

## ECG/PPG Patch Integration for Health Gauge

*Group Leader September 2022 - April 2023*

* Designed, tested, and fabricated a working 4 layer PCB design to meet the client’s specifications
* Designed the electrical schematics to integrate **ECG and IMU** onto the client’s prototypes
* Used Solidworks to design and model the transparent enclosure for the project
* Managed the group’s meetings, deadlines and communication with the client

## Albertaloop

*Electronics Team lead September 2019 - March 2023*

• Participated and demonstrated in the Canadian Hyperloop Conference

## • Designed and tested the navigation module containing GPS, accelerometer and hall effect sensor for speed sensing

• Oversaw the designs made by my group with responsibilities including mentoring, organizing, and revising designs • Collaborated with different sub-teams to integrate electronics throughout the pod