EFREN JR. FERNANDEZ

Electrical Engineer in Training

CONTACT

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Efren Jr. Fernandez
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EDUCATION

University of Alberta

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

Relevant Courses: Embedded Systems Design, Power Electronics, Biophysical Measurements & Instrumentation, Digital Electronics, Data Analysis & Machine Learning, Medical Robotics, Micro-fabrication & Devices

SKILLS

Programming Languages

- Embedded C
- Python
- LaTeX
- MATLAB
- HTML
- C++

Software Tools

- Altium
- KiCAD
- Git
- Bitbucket
- Solidworks
- VSCode
- Zephyr RTOS
- FreeRTOS
- nRF Connect
- Zoho Sprints
- NumPy
- Pandas
- Scikit-learn
- SVM
- Cadence
- LTspice
- Oracle VM
- Ubuntu
- Jupyter Notebooks
- Microsoft Office Suite

Hardware

- STM32
- ESP32
- Nordic 52840
- Arduino
- Teensy
- Atmel
- Soldering
- 3D Printing
- Raspberry Pi 4
- Electronic Test Equipment
- PCB Design & Fabrication
- Schematic Design

Unique Skills

- Agile Scrum Methadology
- Fluent in Tagalog
- Basketball Player
- Willing to Relocate

WORK EXPERIENCE

Element 4

April 2021 - August 2021

IoT Developer, Research and Development January 2022 - August 2022

- Designed, validated, improved, and assembled a working schematic and PCB design for the release candidate product
- Upgraded I2C firmware functionlity for new product features
- Built, tested, and verified experimental results during board and part modifications
- Conducted research on the application of various harvesting techniques for low power IoT devices
- Collaborated with third parties on the case design and fabrication
- Promoted and represented the company during networking events

University of Alberta

January 2021 - April 2021

AR Curriculum Developer

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

PERSONAL PROJECTS

Health Gauge ECG/PPG Patch

September 2022 - April 2023

Group Leader

- 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
- Developed low-level drivers for SPI functionality in firmware
- Used Solidworks to design and model the enclosure for the project
- Managed group meetings, deadlines, and communication with the client

Albertaloop

Sepember 2019 - April 2023

Electronics Team Lead

- Participated and demonstrated in the Canadian Hyperloop Conference
- Designed 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