# Alexa Fernando

alexafernando.com

## EDUCATION

**University of Hawaii at Mānoa**
**GPA: 3.82**
Graduated: May 2021
B.S. in Electrical Engineering

## KEY SKILLS

**Languages:** C++, Java, Verilog, SystemVerilog, Python

**Software:** MATLAB, MPLab X IDE, PowerWorld Simulator, Fusion 360, Vivado, PSPICE, Simulink, AutoCAD, Revit, AGI32, GitHub, Jupyter

**Hardware:** FPGA, Microcontroller, Multimeter, Oscilloscope, Signal Generator, Power Supply

**Relevant Coursework:** Circuit Analysis, Digital Systems & Computer Design, Power Systems Analysis, Signal & System Analysis, Linear Feedback Control Systems, Digital Signal Processing, Optimization, Machine Learning, Physical Electronics, Electromagnetics, Calculus, Physics, Microelectronics, Renewable Energy

## PROJECTS AND EXPERIENCE

**Senior Electrical Engineering Intern - Property & Buildings** - *WSP*
Honolulu, HI / June 2020 - June 2021

- Assisted the electrical team in engineering designs as well as production and construction services.
- Involved in the design of power, telecommunication, and fire alarm systems for commercial buildings per National Electrical Code and State Electrical Code using AutoCAD and Revit.
- Performed lighting design and software calculations for a park lighting replacement project.
- Consulted client on an inverter decision for a PV system in compliance with permitting standards.
- Communicated with clients and team members to develop solutions to projects.

**Li-ion Segmented Cell Project** - *Hawaii Natural Energy Institute, University of Hawaii at Mānoa, School of Ocean and Earth Science and Technology*
Honolulu, HI / August 2020 - May 2021

- Assisted in the development of a new type of Li-ion segmented cell that will contain microelectronic sensor components to read the pressure, temperature, and current of the cells simultaneously. These cells have the potential to gain a new and better understanding of the conditions inside of Li-ion batteries in operando, leading to improvements in battery technology and a longer life cycle.
- Performed research to determine the constraints of the segmented cell design and improve upon previous methods of addressing battery life cycle concerns.
- Designed circuitry to daisy-chain multiple analog and digital sensors on one recording bus.
- Programmed the microcontroller using C++ to interact with sensors and output data in JSON format for further analysis.

**Lab Manager** - *Renewable Energy Design Laboratory, University of Hawaii at Mānoa, College of Engineering*
Honolulu, HI / August 2019 - December 2019

- Managed project execution to ensure adherence to budget, schedule, and scope.
- Tracked project milestones and deliverables.
- Assigned duties and responsibilities to project personnel.

**Smart Hydroponics Project** - *Renewable Energy Design Laboratory, University of Hawaii at Mānoa, College of Engineering*
Honolulu, HI / January 2019 - August 2020

- Worked on developing an IoT-based hydroponics network that monitors and controls the parameters of an ebb and flow hydroponics system using a digital dashboard that is accessible via any portable device.
- Designed a system of microcontrollers, single-board computers, and laboratory-grade sensors.
- Clearly and effectively documented technical instructions for the purpose of project reproduction.

- Implemented by STEM pre-academy as a basis for a variety of different activities involving programming, circuitry, and data collection and analysis to get the young generation of students excited about the capabilities of STEM education.

**Engineering Research and Technical Outreach Assistant** - *STEM Pre-Academy, Office of the VP for Research and Innovation, University of Hawaii System*
Honolulu, HI / May 2019 - December 2020

- Performed project development to support technical application in STEM education.
- Supported the development of hands-on STEM projects consistent with the research and innovation areas of the University of Hawaii.
- Assisted in research-based STEM outreach which includes the collection and integration of appropriate research or technology-related materials for middle school teachers.
- Supported teacher and student workshops and served as a role model for the middle school students.
- Trained and mentored teachers at Washington Middle School on basic electrical engineering skills that were implemented into their STEM curriculum.

**Solar Tracker Project** - *STEM Pre-Academy, Office of the VP for Research and Innovation, University of Hawaii System*
Honolulu, HI / January 2019 - August 2019

- Led a solar tracking project under STEM Pre-Academy that integrated engineering skills and knowledge of sustainability into middle school curriculum by creating activities for students that apply scientific principles to create, observe, and measure the output of energy from solar tracking.

**Website Manager** - *Independent Energy Hawaii*
Honolulu, HI / December 2020 - Present

- Built and designed a website for Independent Energy Hawaii, a solar energy company.
- Managed and maintained site functionality and navigation for both desktop and mobile platforms.

**Barista** - *Starbucks*
Mililani, HI / November 2018 - August 2019

- Provided excellent customer service to guests and created customer connections.

## AWARDS

**Dean's List, College of Engineering** - *Fall 2017/2018/2019/2020, Spring 2018/2019/2020/2021*
**University of Hawaii Chancellor's Scholar**
**Mililani High School Valedictorian** - *2017*