Juan M. Ayala

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Technical Skills

Hardware Design: Switching Regulators, Battery Chargers, Logic, HDMI, MIPI, I2C, SPI, UART, Prototyping, DFM
Design Tools: KiCad, Altium, Saturn PCB ToolKit, ViewMate, LTSpice, PSpice
Equipment: Oscilloscope, Spectrum Analyzer, Digital Analyzer, Digital Power Supply, Programmable Load, Soldering Iron, Hot Air Station, Reflow Oven
Software: C/C++, Python, MATLAB, shell scripts, Git, embedded linux, wxWidgets, OpenCV, GoLang, ReactJS

Experience

Electrical Engineer Nov. 2020 – Jul. 2022
OmniVis Inc *South San Francisco, CA*
- Designed, prototyped and developed circuit solutions for rapid diagnostic products
- Ensured PCBs met manufacturer capabilities and manufacturing documentation is accurate, complete, and contains clear instructions
- Implemented and debugged embedded Linux software for cameras and sensors
- Defined electrical system requirements of handheld diagnostic device
- Managed and work with software contractors and interns to ensure feature feasibility, functionality, and compatibility with hardware
- Established back up plans for scenarios related to potential changes in component stock, customer volumes, and manufacturing changes
- Collaborated with hardware design contractor to iterate designs and develop future solutions

IoT Solutions Intern Jun. 2019 – Sept. 2019
Angaza Design *San Francisco, CA*
- Standalone project researching limitations of LTE-M1/NB-Iot module
- Implemented Amazon Web Services MQTT API on module
- Developed C applications in ThreadX OS

Recycle Technology Assistant Jun. 2018 – Mar. 2019
UC Santa Cruz Ground Services *Santa Cruz, CA*
- Arranged solar panel and sonar sensor placement for optimal functionality
- Analyzed sonar sensor characteristics for microcontroller processing

Engineering Intern Jul. 2017 – Sept. 2017
FreeWire Technologies *San Leandro, CA*
- Produced power distribution PCBs for proper switching and power output to sensors
- Devised and implemented wire harness linking modules and high voltage batteries

Projects

Satellite Power & Test System Engineer Oct. 2019 – Jun. 2020
- Designed MPPT solar power chargers and fuel gauge for battery unit
- Distributed power to x-ray detector and linear transponder with converters
- Created MATLAB script to simulate light spectrum of solar radiation on sensor
- Designed class C Solar Simulator to test coarse sun sensors

Mechatronics Project Mar. 2019 – Jun. 2019
- Competed and won first place in robotics challenge competition
- Designed IR sensor capable of distinguishing 2.0kHz from 180 ft
- Devised wire harness for efficient troubleshooting and disassembling

FM Receiver Jan. 2019 – Mar. 2019
- Created FM receiver from discrete components
- Produced an adjustable oscillator to tune to campus FM radio
- Designed PCB layout to maintain power transfer and signal integrity

Education

UC Santa Cruz Santa Cruz, CA
Bachelor of Science in Electrical Engineering *Sep. 2016 – Jun. 2020*