Colton Acosta

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EDUCATION

B.S.E, Electrical Engineering May 2023
Arizona State University, Tempe, AZ 4.00 GPA

TECHNICAL SKILLS

Design/Modeling: Altium, LTspice, KiCAD, MATLAB/Simulink, Cadence, NX, SolidWorks
Hardware: Microcontrollers, Soldering (SMD), Multimeters, Oscilloscopes, Verilog, FPGA, Function Generators
Software: C, C++, C#, Python, Assembly, Linux, Git, Make, ARM, Visual Studio

EXPERIENCE

SpaceX: Hardware Development Engineer, Starship Electronics October 2023–Present

- Responsible Engineer for a gyroscope that provides inputs to bending compensation algorithms on Starship Booster
- Responsible Engineer for an engineering camera used to stream video of key events in flight to inform design
- Conducted environmental testing including thermal cycling, vibration, shock, leak, humidity, and radiation
- Developed and released PCBs and avionics designs using Altium for schematic capture and layout
- Reduced cost per vehicle stack by more than 150k by developing new technologies for rocket usage such as MEMs gyroscopes, video encoder ASICs, and cutting edge image sensors
- Doubled camera yield by root causing production test failures such as boot failures, loss of streams, and corrupted video packets
- Brought up new PCB designs by testing power trees, serial interfaces, and sensors using oscilloscopes and multimeters
- Coordinated product development by communicating with production, supply chain, and engineering

Raytheon Missiles and Defense: Software Engineer July 2023–October 2023

- Implemented new features for a .NET based WebUI used for automating software (SIL), computer (CIL), and hardware (HIL) in the loop missile tests using C# and Javascript
- Wrote a C# method to automatically locate library dll files to eliminate the need for manually setting the path
- Added a new page to the WebUI for monitoring background test status by querying the API using HTTP requests
- Added Javascript keyboard event listeners user interface to implement quit and save keyboard shortcuts

Garmin Aviation: Embedded Software Engineering Intern May 2022–August 2022

- Developed certification software for a new Vulkan graphics driver to be used in safety-critical avionics systems
- Wrote unit tests with randomized test vectors in C to test the GPU driver source code with maximal coverage
- Resolved runtime errors caused by randomized test vectors by analyzing the source code functions and manually setting up data structures, pointers, arrays, and buffers

Sun Devil Rocketry: President and Avionics Team Founder August 2021–May 2022

- Oversaw all activities of a technical student organization with three rocket propulsion teams, two amateur rocketry teams, a K-12 outreach program, and over 50 members
- Facilitated all project development by holding meetings and design reviews, writing budget proposals, organizing launch logistics, mentoring, and maintaining industry/university relations
- Founded a new avionics team to design the club's first flight computer and promote the development of electrical and software engineering skills among students interested in the aerospace industry

Pyramid Technologies, Inc, Mesa, AZ: Electrical Engineering Intern May 2021–August 2021

- Revised a switching power supply and serial opto-isolator PCB to be usable with multiple bill acceptors
- Designed a new PCB to protect test fixture pins from overvoltage and overcurrent conditions using schottky diodes and a PTC resettable fuse
- Added serial indication LEDs, signal buffering, inrush current protection, and short circuit protection to a USB to MDB serial interface PCB
- Designed a revised bill acceptor software development board by adding an electronic fuse to alleviate faulty supply/loading conditions and provide power supply fault indication
- Performed DC load testing on a new 120V AC power supply to measure power trace voltage drops at full load