

Alexander Diego Sandoval

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Education

University of Colorado at Boulder

B.S. Electrical and Computer Engineering | Computer Science Minor

Graduating 2019

GPA: 3.455

- Society of Hispanic Professional Engineers / Society of American Military Engineers
- Dean's List 2016-2018

Relevant Experience

Network for Exploration and Space Science Research | Colorado at Boulder

Dec 2017 - Present

Undergraduate Telerobotics Lab

Boulder, CO

- Managing tests and experiments to remove constraints towards surface exploration through human-robotic teleoperations
- Creating interface for a teleoperated rover and 6-axis robotic arm with the robotic operating system using C++, C, and Python to engage in assembling a radio telescope array

Aerospace Senior Design | Colorado at Boulder

Aug 2018 - Present

JPL Customer Rover Project

Boulder, CO

- Designing a small remote-controlled rover that provides video, obstacle detection data, and GPS data in a forest like environment
- Leading the design for system integration to oversee software, communication, mobility, and controls

Xcel Energy Engineering Internship | Xcel Energy

May 2017 - June 2018

System Performance Engineering Intern

Denver, CO

- Built a .NET user interface dashboard display to better increase the team's accessibility to outage data
- Performed validation tests to correct organizational structure and speed of the code for the dashboard

DARPA Spectrum Collaboration Challenge Research | Colorado at Boulder

Aug 2017 - Dec 2017

SpeCOLab Team

Boulder, CO

- Constructed simple signal processing scripts for communication between two SDR radios
- Developed different Python containers for radio emulation testing of low latency and high throughput for the challenge

Colorado Space Grant Consortium | Colorado at Boulder

Jan 2017 - May 2017

Lab Team

Boulder, CO

- Collaborated with a student team to better enhance the resources available to different project groups
- Developed a 360-degree rotating beacon transmitter for successful launch of a Mars Robotic Challenge

Class Projects Experience

University of Colorado at Boulder

Aug 2015 - Present

Class Projects

Boulder, CO

- Implemented C, C++, and assembly software for the LPC1115, an ARM Cortex M0 microcontroller board
- Designed a RISC-V processor pipeline through an unfamiliar development software tool
- Created an Android controlled robot that continuously collects and displays proximity readings
- Built a digital logic time keeping clock by manipulating logic gates with vigorous soldering

Skills

Programming Languages: C, C++, Python, ROS, C# .NET, MATLAB, Assembly

Software Tools: Microsoft Office, Visual Studio, Github, Linux, Windows, PADS Mentor Graphics, GNU Radio

Hardware: SMT Component Assembly/Repair, Microcontrollers, PCB Design, Hand-Soldering

Courses: Aerospace Senior Design, Programming Digital Systems, Digital Design Lab, Computer Organization, Operating Systems, Digital Signal Processing, Systems Engineering, Human Spaceflight