# Colton Acosta

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## SUMMARY

Junior aerospace engineering student with collaborative project experience in hardware-software interfacing, computer-aided modeling, and programming with interests in control theory and signal processing.

## EDUCATION

**B.S.E, Aerospace Engineering;** Autonomous Vehicle Systems — Graduating May 2022
Arizona State University, Tempe, AZ — 4.00 GPA
Barrett, The Honors College

## TECHNICAL SKILLS

**Design and Modeling:** MATLAB, SOLIDWORKS, LabVIEW, Microsoft Office, GrabCAD
**Programming:** Python, Arduino C/C++, Linux (git, vim, gcc), LaTeX, R

## EXPERIENCE

**Liquid Propulsion Avionics Lead, Sun Devil Rocketry** — August 2019-Present

- Designing an avionics system for a liquid propellant engine including eight valves, ten sensors, and two controllers
- Interfacing sensor outputs for temperature, pressure, thrust, and flow measurements with a Python GUI program
- Built an analog signal amplifier using an integrated circuit chip to boost load cell and pressure transducer output to a readable form
- Reported project progress in published AIAA Propulsion and Energy conference paper
- Wrote a development plan for the 2020-2021 academic year consisting of 35 deliverables to organize future progress and delegate workloads among new members

**5280 Team Member, Sun Devil Rocketry** — Fall 2018-Spring 2019

- Collaborated with a group of 12 students to launch an amateur rocket to an altitude of 5280 feet
- Determined build specifications and apogee altitude with OpenRocket software
- Constructed rocket with phenolic tubing wrapped with epoxied fiberglass fabric and laser-cut fins
- Used a microcontroller breakout board with an altimeter for parachute deployment

## ACADEMIC PROJECTS

**Team Lead, Airfoil Statistics Project** — Spring 2020

- Lead a group of seven students to complete a semester long project by devising a project plan, delegating workloads, setting timelines, and scheduling team meetings
- Collected computational aerodynamic data with ANSYS for airflow over a wing section with configurable design specifications created with SOLIDWORKS from an airfoil parameterization
- Analyzed data with an ANOVA test and computed significance-based regression models using R

**Honors Student, Trans-lunar Injection Simulation** — Spring 2019

- Simulated a free-return, trans-lunar injection orbital trajectory in MATLAB
- Calculated the trajectory by solving the two-body problem using numerical differential equation solvers with Apollo 11 low earth orbit initial conditions, and animated the solution to visualize the trajectory