Caleb G. Strout

Jurupa Valley, CA | caleb.g.strout@gmail.com | (909)-682-4362 | Portfolio | LinkedIn

EDUCATION

Vanderbilt University   **Nashville, TN**
Bachelor of Engineering in Mechanical Engineering (Concentration in Aerospace)   *May 2027*
- **Relevant Coursework:** *Aerospace Propulsion, Heat Transfer, Fluid Mechanics, Thermodynamics, Mechanical Design, Dynamics, Statics, System Dynamics, Mechanics of Materials, Machine Analysis and Design*
- **GPA:** *3.91, Dean's List (all semesters)*

SKILLS

- **Programming Languages:** Python, MATLAB, LabVIEW, R, C++
- **Tools:** CATIA**,** Creo, SOLIDWORKS CAD/CAM, OnShape, AutoCAD, Ansys, Arduino, 3-D Printing, Raspberry PI, CNC, Milling

EXPERIENCE

Whisper Aerospace   **Nashville, TN**
Incoming Test Engineer Intern   *Feb 2026 – May 2026*
- Continuing failure testing of commercial leaf blower including acoustic tunnel testing, structural failure, temperature testing, and data analysis

Vanderbilt Aerospace Design Laboratory   **Nashville, TN**
Summer Research Intern   *Jun 2025 – Aug 2025*
- Engineered a gear system to deploy fins simultaneously with one servo motor, inducing different drag forces dependent on the fins' angular positions
- Integrated a VN-100 IMU with a Raspberry Pi 4 using Python to collect apogee related data to determine when fins should be deployed with 95% accuracy
- Introduced an induced drag simulation functionality to an existing rocket simulation software using MATLAB including an increased drag force when fins are deployed at a specific altitude, velocity, and time based on a predicted apogee with 95% accuracy
- Launched 68" subscale rocket on 4 separate occasions with target apogees of 750 feet that successfully deployed fins and recorded apogees within 20 feet of the target

NASA Johnson Space Center   **Houston, TX**
Hardware Simulator and Researcher   *Oct 2023 – May 2024*
- Developed unique methods to implement radiation detection in a spacesuit and how they could be interfaced with programmable hardware such as Arduino and Raspberry PI
- Prototyped various wearable technology designs to accommodate astronaut simulation testing using SolidWorks

PROJECTS

NASA USLI Launch Competition | *SOLIDWORKS, R&D, C++, CNC, Simulations, FEA, CFD*   *Aug 2025 – Present*
- Validated mechanical design choices of vehicle and payload components including payload shearing, bolt tear out, airframe loads, and coefficient of drag to ensure safety and reliability of design using Ansys FEA and CFD products
- Created a hardware in the loop test bench to validate payload electronics and simulate rocket flight without motor usage using C++, Python, and TCP
- Machined and manufactured vehicle components including fiber glass nose cone, carbon fiber fins, and aluminum bulk plates using CNC manufacturing and machining
- Designed soil excavator payload that transfers soil to the vehicle to test conductivity, pH level, and nitrogen-nitrate content of the soil

Autonomous Lunar Robot | *SOLIDWORKS, R&D*   *Aug 2024 – Present*
- Designed and machined u-channel and tension belt retainer in SOLIDWORKS to improve electromechanical functions of robot designed to dig and transport lunar dust
- Provisioned an enhanced drivetrain system of the robot in preparation to fully autonomize the robot's operations

Intercollegiate Rocket Competition (IREC) | *SOLIDWORKS, Onshape, Arduino, C++*   *Aug 2023 – Jun 2024*
- Launched 110" rocket with 5" diameter which achieved apogee of 8500 ft
- Designed camera payload system for the rocket once it reached altitude of 7000 feet using Onshape, C++, and Arduino