# Daniel Ashby

Mechanical Engineering Assistant
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## EDUCATION

### B.S. Mechanical Engineering, B.S. Mathematics
**May 2025**

Utah State University, Logan, UT

- Engineering emphasis in Aerospace
- Mathematics emphasis in Computation
- Minor in Computer Science
- Notable classes taken are Compressible Fluid Flow, Propulsion Systems, Aerodynamics, and Dynamics of Atmospheric Flight

## SKILLS & CERTIFICATIONS

- Python (NumPy, SciPy, matplotlib), Java, C
- Experience working in a terminal environment
- Computational Numerical Analysis
- SolidWorks (CSWA)
- Licensed Amateur Radio Technician
- Troubleshooting and problem-solving
- Project ownership and team management
- Project planning and scheduling

## EXPERIENCE & RESEARCH

### ASPIRE Research Center, Logan, UT- *Engineering Assistant*
**May 2023 – Present**

- Designed mechanical subsystems in the world's first 1MW wireless vehicle charging station using CAD as well as stress, fluid, creepage, and clearance analyses for coolant and high voltage systems.
- Wrote assembly instructions and assisted in the assembly of a 1MW wireless vehicle charging station by creating easy-to-understand assembly diagrams and descriptions.
- Led design review meetings with staff and project engineers in a fast-paced environment to achieve the research center's demanding goals and timelines.

### Computational Math Research, Logan, UT - *Independent Research*
**March 2022 – Aug 2023**

- Collaborated with a faculty member in the mathematics department to duplicate a research paper's result using Python.
- Wrote and documented code to simulate binary phase fluid mixture separation with the Cahn-Hilliard equation using the NumPy and Matplotlib Python libraries

### USU Physics Dept, Logan, UT- *Research Assistant*
**Feb 2022 – Aug 2023**

- Assisted in the operation of the DARPA-funded USU Atmospheric Lidar Observatory by collecting data overnight to be used to measure the temperature and density of the atmosphere at specific altitudes.
- Designed and built an auto-focusing gantry system to assist in the focusing and tuning of the optics on the observatory telescopes by utilizing an Arduino for control and Python for data interpretation.

## EXTRACURRICULARS

### Aggie Solar Racing
**July 2022 - May 2025**

- Worked with USU and the College of Engineering to found the USU solar car design team.
- Conducted student and sponsor outreach, financial and project planning, and led team meetings to ensure that tasks were completed in a timely manner.
- Assisted and guided tasks such as designing tubular frames and composite shells using SolidWorks weldment and surface modeling, and conducting FEA analysis on the frame to simulate loading conditions in various states.
- Led two senior capstone teams; one that worked on developing and optimizing an aerodynamic, composite shell of a solar car using CFD analysis, as well as scale wind tunnel tests to validate computational analysis.

### Get Away Special
**September 2020 – March 2022**

- Built a satellite ground station to transmit and receive telemetry and attitude data from CubeSats in Low Earth Orbit by utilizing open-source radio and satellite projects.
- Assisted in the successful mission of the GASPACS CubeSat, one of the first 100% undergraduate CubeSat missions by operating as the Communications team lead that ran a small sub-team of 5 members..