

# Mitchell Anderson

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## EDUCATION

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**Northern Arizona University, B.A. Mechanical Engineering, 3.50/4.00 GPA** Flagstaff, AZ | **Graduation: Fall 2022**

- Relevant Courses: Aerodynamics, Fluid Mechanics, Dynamics, Thermodynamics and Material Science
- Awards: Dean's List 2019-2021

## WORK EXPERIENCE

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**W. L. Gore, Internship** Flagstaff, AZ | May 2022 – Aug 2022

- Practiced project management skills by defining project scope and success, developing a Gantt chart and leading weekly meetings with the engineering team
- Conducted initial tests to define the design space and then modeled a mechanical fixture in SolidWorks to improve an existing test method
- Utilized SLA 3D printers to fabricate fixture, selected hardware and assembled prototype to enable an iterative design process
- Designed and executed DOEs to efficiently test fixture and identify any interactions between factors
- Analyzed DOE results and performed variance components analysis to evaluate fixture effectiveness
- Established cross-divisional relationships and sought out subject matter experts to advise on aspects outside of skillset

**BOSC LLC, Internship** Castle Rock, CO | Jan 2021 – May 2021

- Constructed SolidWorks designs that aided in the development of a biomedical peristaltic pump for microscopic surgery
- Used MATHCAD results to develop a SolidWorks program that calculated the volume change of the fluid per degree of rotation
- Modeled multiple medical grade peristaltic pumps in SolidWorks as another qualitative model while prototyping
- Tested and analyzed prototypes with mentor and team

**Northern Arizona University, Teaching Assistant** Flagstaff, AZ | Aug 2020 – Dec 2021

- Peer Math Instructor for Calculus I, *Two Sections; 95 Students*
  - Graded all homework and was in class once a week to assist students, separate tutoring sessions and managed bookkeeping
- Teaching Assistant for Differential Equations, *Single Section; 40 students*
  - Graded all homework and kept records of all students' grades
- Teaching Assistant for Thermodynamics, *Two Sections; 120 students*
  - Graded homework and quizzes along being a part of the integration with Interactive Thermodynamic software

## PROJECT EXPERIENCE

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**Solar Unmanned Aerial Vehicle, Senior Capstone Project** Flagstaff, AZ | Jan 2022 – Current

- Project lead of six engineering students; four mechanical and two electrical
- Design and construction of multiple unique aircrafts while in cohorts with NACA standards
- Tested designs using software such as XFOIL and SolidWorks, along with physical wind tunnel lab testing
- Worked with Vertical Mill and 2-Axis Lathe to fabricate necessary parts

**Vortex and Source Panel Method Analysis, Aerodynamic Project** Flagstaff, AZ | Jan 2022 – May 2022

- Derived system of equations to numerically model discrete flow elements for any rigid body given the boundary conditions
- Wrote MATLAB code to integrate system of equations to generalize calculations and allow for multiple inputs and exports
- Export lift, drag, circulation and vortex strength for any rigid body

**CWC Wind Turbine, Junior Year Project** Flagstaff, AZ | Jan 2021 – May 2021

- Project lead of four engineering students; developed the airfoil design of the turbine blade
- Constructed MATLAB code to calculate the blade length, radius, tip speed ratio and angle of twist for said blade
- Used values derived from MATLAB analysis and simulated models in QBlade using their built in Blade Element Momentum (BEM) feature
- Final blade profile was modeled in SolidWorks and a proof-of-concept model was fabricated using a FDM 3D printer

**Interactive Thermodynamics, Teaching Assistant Project** Flagstaff, AZ | Aug 2020 – Dec 2020

- Converted all written homework solutions into a coded script in the program *Interactive Thermodynamics*, decreasing time spent by faculty and graders

## SKILLS

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**Software:** SolidWorks, JMP, MATHCAD, MATLAB and QBlade

**Hardware:** Vertical Mill, Lathe, FDM & SLA 3D Printing, Bandsaw, and Soldering

**Language:** Bilingual proficiency in English and American Sign Language