Calvin Dahl

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EDUCATION

University of Central Florida [3.815 GPA]
Orlando Fl | May 2024 with Bachelor's in Aerospace Engineering
Eastern Florida State College [3.31 GPA]
Melbourne Fl | Fall 2018 – Spring 2021 with AA

- Honoree of Tau Sigma National Honor Society
- Bright Futures Academic Scholarship Recipient
- Dean's List [Fall 2021 - Spring 2023]

PROJECTS / EXPERIENCE

SENIOR DESIGN **Fall 2023 - Ongoing**

- Built a rocket with a team of 5 other students that attempted to carry sensitive payload to 2000 feet and return to earth safely.
- Contributed to: Project Management, Concept Generation, Failure Modes and Effect Analysis, Prototyping and Testing, rocket performance and stability analysis using CFD, and manufacturing parts of the rocket.
- Designed, optimized, constructed, and tested the payload bay of the rocket.
- Used STAR-CCM+ to find critical non-dimensional parameters such as lift and drag at sideslip angles under high and low velocities.
- Coded a rocket performance program in MATLAB that evaluates the rocket's trajectory, modeled with the effects of crosswind and the stabilizing force of lift and how drag is affected across the flight path.
- Showcase Semi-finalist: picked to present project as one of 45 out of 180 different senior design teams.

CFD UNDERGADUATE RESEARCH **Summer 2023 - Ongoing**

- Learned how to use STAR-CCM+ to simulate fluid flow - including the validation of an ONERA-M6 wing by matching wing pressure plots to that of experimental data.
- Used different fluid flow models to capture effects on sections of a wing, including wake.
- Presented accomplishments and work every week to other student researchers and professor.

THIN PLATE PROJECT **Fall 2022**

- Worked with a team of 3 other students in the analysis of a Mig-15 style wing fence using thin plate theory in NX Nastran.
- Modeled a stall fence based off a Russian airfoil (tsagi12-il) and simulated the stall fence based on aerodynamic spanwise flow loads.

AIRFOIL ANALYSIS **Fall 2022**

- Analyzed effectiveness of various NACA airfoils and respective 3D wings under changing Reynolds Number and angle of attack in XFoil and XFLR5.

WIND TUNNEL PROJECT **Fall 2022**

- Worked with a team of 3 other students in the flow visualization of a model car in a wind tunnel, along with the respective drag forces under different flow velocities.

BEAM VIBRATIONAL ANALYSIS **Spring 2023**

- Performed Modal Analysis of a cantilever beam using Ansys Workbench

ROCKET ENGINE PROJECT **Spring 2024**

- Created code using MATLAB to march through a turbojet engine and solve aircraft performance parameters.

JAVASCRIPT GAME **Fall 2023 – Ongoing**

- Learned object-oriented programming in JavaScript and HTML5 to create a 2D Videogame from scratch.
- Used modeling methods to create Catmull-Rom splines and discretized to model 2D terrain for collision.
- Created a Physics Engine for object movement on screen.

OTHER

- 2021 & 2022 Collegiate National Competitor - USA Climbing
- Designed and created various origami models including dragons, birds, and beetles.
- Designed and printed 3D models for rock climbing gym holds and walls using AutoCAD and SolidWorks.

SKILLS

PROGRAMMING

- MATLAB
- JavaScript
- HTML5
- C & C++

COMPUTER AIDED ENGINEERING

- AutoCAD (Design and Drafting Certification)
- SolidWorks (Certified SolidWorks Associate)
- Fusion 360
- NX Nastran
- Ansys Workbench
- STAR-CCM+

OTHER

- XFOIL And XFLR5
- NI LabVIEW
- Ansys STK
- Open Rocket
- Gantt Project
- Microsoft Excel