JOSHUA BELTRAME

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WORK EXPERIENCE

Flight Test Engineering Intern – Autonodyne LLC **May 2024 – August 2024**

- Fabricated fixtures using *Autodesk Fusion 360* to integrate hardware onto flight vehicles.
- Performed flight tests on software and hardware to validate its efficacy and determine any problems.
- Designed software with *Python, TCL/Expect* and *MAVProxy* to interface with *PX4* to pull vehicle flight logs.
- Automated various procedures, including downloading flight logs, new vehicle registration and uploading flight logs to a database, while making the software highly user-centric for quick and easy usage.
- Wrote documentation for the project in its entirety and created a detailed user-guide for installation/usage.
- Instructed the Flight Test Team on usage of the software and its functionality.

Quality Engineer Intern – Honeybee Robotics **May 2023 – August 2023**

- Established a baseline of current polymeric mixing processes for analysis of new systems.
- Identified and tested different factors that potentially impacted the hardness of polymeric samples.
- Evaluated how the hardness of polymerics and how they change over time after curing.
- Analyzed data using *Microsoft Excel* and *Python* for visual representation and statistical analysis.

Physics Tutor – Academic Advancement Center **Aug 2022-Present**

- Assisted the Professor with activities and questions by students during recitation periods.
- Validated the accuracy of students in-classwork and redone homework assignments.
- Work through and explain physics questions and concepts to students.

EDUCATION

Embry-Riddle Aeronautical University Daytona Beach, FL
Bachelor of Science – **Aerospace Engineering** May 2025
Area of Concentration – ***Aeronautics*** GPA 3.97/4.0

PROJECT EXPERIENCE

Airplane Preliminary Design – Project Manager **Aug 2024 – Present**

- Leading a team of 5 students designing a Hybrid-Electric Short Takeoff Landing (STOL) Military Utility aircraft.
- Designed the initial size, geometric parameters, and aerodynamics of the main wing planform of the aircraft.
- Conducted *XFLR5* and *OpenVSP* analysis of the wing to iterate and evaluate planform performance.
- Sized and lofted the fuselage in accordance to required payload volume and statistical crew standards.
- Developed the outer mold line (OML) of the whole aircraft from the initial sizing using *CATIA*.

AIAA Design, Build, Fly Competition (DBF) –Tails Tech Lead **Sep 2022-Present**

- Designed devices to mount Molex connectors in the aircraft to decrease the assembly time.
- Modeled tail surfaces, structures and control surfaces for the empennage given the outer mold line for the aircraft.
- Integrated tail structures and surfaces with the main aircraft assemblies.
- Oversaw and coordinated sub-team working on specific tail components.

Experimental Aerodynamics Diamond Airfoil Wing Test **April 2024**

- Designed a wing planform with a diamond airfoil section using *CATIA*.
- Performed preliminary aerodynamic analysis with *Microsoft Excel* and *XFOIL* to optimize the wing.
- Simulated the wing and internal parts with *NX FEMAP* to validate the wing planform's structure.
- Tested the wing at low speeds to analyze the efficiency of supersonic wings in adverse conditions.

Beechcraft Model 18 Stability Analysis **Jan 2024 – May 2024**

- Coordinated a team to conduct a full, in-depth, static-stability analysis of an aircraft.
- Performed manual calculations obtaining the aircraft's longitudinal, directional, and lateral stability coefficients.
- Developed an *Excel* Spreadsheet to perform these calculations to validate the hand calculations.
- Produced a detailed report outlining the procedures used to obtain these coefficients and the overall results.

SKILLS

CAD Software: CATIA, Autodesk Inventor, Autodesk Fusion 360, OnShape
Engineering Software: Multisim, OpenRocket, NX FEMAP, XFOIL, Git, USAF Digital DATCOM, XFLR5, OpenVSP
Programming Languages: Java, Python, MATLAB, C++, Bash, Arduino (Familiar With)
Microsoft Office Suite: Word, PowerPoint, Excel, Outlook