

# Giorgio Ladonko

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## EDUCATION

Embry-Riddle Aeronautical University, Daytona Beach, FL GPA: 3.53/4.00  
Master of Science in Aerospace Engineering, *Dynamics and Control Track* May 2026  
Bachelor of Science in Aerospace Engineering, *Aeronautics Concentration, Honors* May 2025

## EXTRACURRICULAR PROJECTS

**NASA - Coaxial Continuous Fiber 3D Printing:** *Project Leader* April 2024 – Present

- Analyzed print quality, speed, and material usage to evaluate print efficiency to reduce cost.
- Modified the dispensing nozzle to reduce friction by 25% and enhance high flow dispensing capabilities.
- Tested the thermal properties of various thermosetting polymers and carbon fiber specimen.
- Evaluated heat resistance, thermal conductivity, and overall durability of the material.

**Mach Flow Lab - Supersonic Impinging Jet Flows:** *Undergraduate Research Assistant* May 2024 - August 2024

- Optimized nozzle design by simulating flow dynamics in *Ansys Fluent* to achieve desired flow characteristics.
- Designed a converging nozzle in *MATLAB* and *CATIA v.5* to simulate supersonic jet exhaust flow conditions.

**AIAA Design, Build, Fly Competition:** *Production Design Team Member* August 2023 - February 2024

- Incorporated elevator and rudder control motors into the design model of the horizontal and vertical tails.
- Contributed to the development of horizontal and vertical tail structures, including the elevator and rudder units.

## ACADEMIC PROJECTS

**Aircraft Preliminary Design:** *Hybrid-Electric Military Logistics Aircraft* August 2024 – Present

- Performed initial tail sizing and geometry, optimizing aerodynamic efficiency and stability.
- Conducted comprehensive stick-fixed static stability analysis to estimate aircraft control and performance.
- Utilized *VSP* and *Surfaces* analytical software to verify hand calculations and iterate design improvements.
- Selected hybrid-electric propulsion components and optimized battery packs to meet aircraft energy requirements.
- Estimated and analyzed key performance metrics and stability parameters for target aircraft.

**Numerical Linear Algebra:** *Digital Signal Analysis* August 2024 - Present

- Analyzed the sound pressure data using the Fast-Fourier Transform and Discrete Cosine Transform in *MATLAB*.
- Applied simplified noise modeling using Lighthill's acoustic analogy for aeroacoustic analysis.
- Calculated Strouhal number and vortex shedding frequency to estimate aeroacoustic noise.
- Performed CFD analysis of airflow over an airfoil to study flow separation and vortex shedding in *Ansys Fluent*.
- Analyzed boundary layer effects using empirical formulas for laminar and turbulent flow.

**Experimental Aerodynamics Project:** *Supersonic Wing at Low Mach Number* April 2024

- Led an 8-member team in designing, manufacturing, and wind tunnel testing a low Mach supersonic wing.
- Conducted structural load analysis using Siemens Femap, verifying hand calculations.
- Assembled the wing with aluminum spars, ribs, and skin, secured with industry-grade epoxy.

**Airplane Stability and Controls:** *Stability Analysis of an Aircraft* February 2024 - April 2024

- Led a team in conducting comprehensive stick-fixed stability analysis for the Beechcraft Model 18 AT-11 aircraft.
- Developed a versatile Excel spreadsheet along with MATLAB code to verify the accuracy of the calculations.

## WORK EXPERIENCE

**College Of Engineering Tutoring Center:** *Aircraft Stability and Control Tutor* September 2024 - Present

- Worked collaboratively with students, assessed their work, and offered constructive feedback for improvement.

## SKILLS

*CAD / Analytical Software:* CATIA v.5, SolidWorks, AutoCAD, ANSYS Fluent, Siemens Femap, VSP, Surfaces  
*Programming Languages:* MATLAB, Python, Simulink, Excel VBA  
*Communication:* Technical Communication / Writing, Public Speaking