Jose A. Murphy

(386) 871-1066 | joseantoniomurphy@icloud.com | www.linkedin.com/in/joseamurphy | U.S. Citizen

EDUCATION

Embry-Riddle Aeronautical University — *Daytona Beach, FL*
Bachelor of Science in Aerospace Engineering — May 2028
GPA: 3.96

PROJECT EXPERIENCE

Mechanical Team Lead — Daytona Beach, FL
Minerva Weather Balloon CubeSat Research Platform — *November 2024 – Present*

- Led a 10-member mechanical team developing a modular high-altitude platform for CubeSat payload testing and rapid hardware iteration.
- Led the design of a 1U (10 x 10 x 10 cm) payload shell scalable to 2U/3U; reduced the current shell prototype to 80 g against a 200 g requirement by replacing bulky walls with lightweight struts using Inventor and 3D Printing.
- Designed the Ground Station Receiving Unit from CAD through preliminary design review, integrating antennas and electronics; standardized the mechanical team's engineering-drawing and GD&T release process.
- Integrated antennas, radios, sensors and electronics into flight hardware through wiring, soldering, and assembly.
- Executed two high-altitude flight campaigns by integrating flight hardware and analyzing MATLAB telemetry; investigated a post-release communications loss and identified limited FSK radio range as the root cause.

Structures and Composites Analyst — Daytona Beach, FL
Zephyr Supersonic Sounding Rocket — *August 2025 – May 2026*

- Performed structural analysis and testing of a Mach 1.2 sounding rocket under combined aerodynamic, propulsion, and inertial loading.
- Developed MATLAB section-analysis tools modeling bulkheads, propulsion, parachute, and ballast as point masses to calculate shear, normal, and von Mises stresses, reducing manual evaluation time by 60% and informing CNC-machined bulkhead design.
- Used sensitivity studies to redesign fins, reducing shear stress in the highest-loading region and shifting the center of pressure; cross-checked analytical results in FEMAP.
- Supported CNC machining of structural bulkheads and composite fabrication of the fiberglass body tube, translating structural analysis into manufacturable hardware.

WORK EXPERIENCE

Mechanical Engineer — Daytona Beach, FL
Space Technologies Laboratory — *January 2026 – Present*

- Performed thermal and structural finite-element analysis in Ansys for a lunar-deployed camera system, evaluating survivability under launch accelerations up to 15 g and landing shock loads up to 10 g.
- Developed MATLAB image correction and data processing pipelines to reduce optical lens distortion for lunar imaging, supporting verification and test of flight hardware under thermal/mechanical loading.

Crew Trainer – Mission Center Complex — Huntsville, AL
U.S. Space and Rocket Center — *May 2026 – July 2026*

- Trained 300+ Space Camp mission crews across four operational modules: Mission Operations Control Room, Flight Deck, Space Station, and EVA, on Artemis and Space Shuttle mission profiles.
- Operated Binary Star Software to run live simulated missions end-to-end (launch, orbit, docking), injecting anomalies and coaching crews through checklist- and decision-tree-based troubleshooting.

LEADERSHIP

Vice-President — Daytona Beach, FL
Embry-Riddle Orbital Research Association — *December 2025 – Present*

- Coordinated technical project timelines and engineering reviews across student-led research teams, developing both technical and leadership skills.
- Led the planning and execution of technical workshops, conference programs, and collaborative aerospace initiatives on both national and international levels.

TECHNICAL SKILLS

CAD: CATIA V5 (certified), SolidWorks (certified), Fusion 360, Onshape, Inventor, GD&T
FEA: Ansys, FEMAP
Manufacturing: 3D Printing (FDM), Composite Fabrication, Rapid Prototyping
Coding: MATLAB, Simulink, Python, Git, GitHub, Arduino IDE, CircuitPython
Languages: Fluent English, Fluent Spanish, Intermediate French