Reagan Elwell

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Education

Embry-Riddle Aeronautical University Daytona Beach, FL

Bachelor of Science in Mechanical Engineering May 2028

Area of concentration: Autonomous Systems and Robotics Minor: Space Operations

Undergraduate Research

Shock Cord and Tube Testing | Club Involvement | Embry-Riddle August 2025 – Present

- Researching and designing a testing apparatus for Shock Cord analysis and Tube performance evaluation.
- Preparing samples of Kevlar for tensile testing, following lab procedures to ensure consistency.
- Operating the LoCap machine and applied it in the testing processes.

6 D.O.F Stochastic Hypersonic Flight Simulator | Club Involvement | Embry-Riddle August 2025 – Present

- Developing code for hypersonic aerodynamic lift calculations ensuring seamless integration between Python and MATLAB.
- Conducting testing and refinement of the simulator as development progresses.

Project Experience

Icarus Sounding Rocket Program | Club Involvement | Embry-Riddle August 2024 – Present

- Performed pre-launch tests, assembling rockets for launch, developing standard operating procedures (SOPs), and using Open Rocket to model designs and simulate launch performance.
- Led a team in modeling components for Preliminary Design Review.
- Applied CAD design and modeling to develop critical components for high-powered and experimental rockets, with additional responsibilities in wiring and system integration.

MICRO-G NEXT Challenge | Microgravity Club Project | NASA August 2024 –October 2024

- Developed a solution to NASA's Microgravity Operations – Soft Good Attachment Device challenge.
- Designed a reusable cartridge and reloading mechanism for a nail gun mechanism in CAD.
- Contributed to drafting and editing the team's technical paper submitted to NASA.

NASA GRC Shadowing | 120-hour Shadowing Experience | NASA November - December 2023

- Attended meetings for the Communications Services Project and gained insight into the employment of commercial satellite communications for near-Earth operations.
- Calibrated ASCR Gas Benches for combustion engine research, observed Super Sonic Wind Tunnel tests, and assisted in test preparation.

Skills

Engineering Software and Programming: CATIA v.5, Autodesk Inventor, MATLAB, Python, HTML, CSS

Technical: Technical writing, Research and Synthesis, Engineering Drawing

Language: Proficient in Spanish