# Kilian O. Olen

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## PERSONAL PROFILE

A self-motivated, detail-oriented student with research experience in academic and industrial settings, aspiring to pursue a Master of Science in Mechanical Engineering. A current NASA OSTEM intern and undergraduate honors student with a burning desire to conduct research in Robotics, focusing on biologically inspired design, control, and exploration in dynamic environments, including planetary systems. A confident presenter and tutor, skilled at simplifying complex concepts for learners at all levels.

## EDUCATION

**Bachelor of Science in Aerospace Engineering** — Expected May 2025
Embry-Riddle Aeronautical University (ERAU), Daytona Beach, Florida — GPA: 3.75/4.00
- Concentration: Astronautics — Honors Program
- Minor: Computer Aided Design / Computer Aided Manufacturing
- Academic Honors: Dean's List (All terms)

**Bachelor of Science in Engineering Physics** — Expected May 2025
Embry-Riddle Aeronautical University, Daytona Beach, Florida — GPA: 3.75/4.00
- Concentration: Spacecraft Systems — Honors Program
- Minor: Applied Mathematics
- Academic Honors: Dean's List (All terms)

**Associate of Arts with Highest Honors in Engineering** — June 2020
Broward College, Davie, Florida — GPA: 3.94/4.00
- Academic Honors: President's List (3 terms), Dean's List (1 term)
- Graduation Honors: Highest Honors, Robert "Bob" Elmore Honors College

## RESEARCH INTERESTS

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|---|---|---|
| Biologically Inspired Robotics | Search and Rescue Robotics | Legged Robots |
| Field Robotics | Space Robots and Systems | Manipulation |
| Planetary Robotics | Human-Robot Interaction | |

## RESEARCH EXPERIENCE

**ERAU Space and Atmospheric Instrumentation Laboratory** — Daytona Beach, Florida
*Undergraduate Research Assistant to Dr. Aroh Barjatya* — Feb. 2023 – Present
- Soldered and assembled multiple payloads to be used in upcoming GPS radiosonde balloon satellite launches, demonstrating skills in soldering and electronic component integration.
- Tested thermistors intended for future balloon satellite payloads, selecting an optimal operating range to achieve precise altitude-dependent readings, contributing to data accuracy in high-altitude experiments.
- Enhanced the control and monitoring system of a spin table used in testing boom deployment on sounding rockets, introducing improvements that significantly increased system efficiency and data accuracy for critical rocket deployment experiments.
- Assisted with the deployment and monitoring of GPS receivers to assess the impact of a nearby SpaceX Falcon Heavy launch on ionospheric electromagnetic wave propagation.

**Honeywell Aerospace / ERAU Office of Undergraduate Research** Clearwater, Florida
*Electrical & Systems Engineering Research Assistant* Nov. 2022 – May 2023

- Volunteered to contribute to a collaborative research endeavor, jointly undertaken by Embry-Riddle Aeronautical University and Honeywell Aerospace, which sought out students with a strong engineering background and electrical experience to address real-world industry challenges.
- Hosted weekly meetings with a cross-functional team to design and implement a knowledge-based system capable of streamlining and eliminating bottlenecks in the diagnosis and repair of faulty inertial navigation systems, resolving an issue that had been halting progress at the facility.

## RELEVANT PROFESSIONAL EXPERIENCE

**NASA John H. Glenn Research Center** Cleveland, Ohio
*Graphics and Visualization Lab Intern* Aug. 2023 – Present

- Contribute to the development of concept vehicles within a cutting-edge flight simulator, actively engaging in the creation of related visualizations using virtual reality and augmented reality technologies.
- Support ongoing visualization efforts with the modeling of both conceptual electric aircraft designs and hardware prototypes.

**Honeywell Aerospace** Clearwater, Florida
*Electrical & Systems Engineering Intern* May 2023 – Aug. 2023

- Expanded upon my involvement in the research program by transitioning to a summer internship position at the Clearwater facility.
- Maintained an integral role in the project following this transition, further refining and optimizing the design and implementation of the knowledge-based system.
- Proactively scheduled and conducted frequent meetings with site engineers and technicians, which provided valuable insights into the intricacies of the manufacturing process and ensured a seamless alignment between the system's functionality and the manufacturing requirements.
- Presented the model to facility leaders, highlighting a projected annual labor cost reduction of $250,000 for the eTALIN product line and establishing a framework for extending these savings to other product lines.

**ERAU Academic Advancement Center** Daytona Beach, Florida
*Engineering & Engineering Sciences Tutor* Aug. 2022 – Present

- Provide mentorship and guidance to fellow students, actively assisting them in improving their understanding of fundamental engineering disciplines including Statics, Dynamics, Solid Mechanics, MATLAB, and Aerospace Vehicles.

## RELEVANT PROJECT EXPERIENCE

**Buoyant Pneumatic Drone** Jan. 2023 – May 2023

- Developed a cost-effective model to simulate satellite orbital adjustments in a 2D plane, implementing cold gas thrusters and autonomous control behaviors.
- Designed detailed 3D models of the proposed system in Autodesk Inventor, facilitating iterative design improvements and ensuring compliance with all specifications.
- Programmed a virtual model of the system in Matlab, showcasing a strong understanding of dynamics and simulation.
- Presented the completed system to peers, demonstrating its ability to achieve its design objectives and its potential for future applications.

**Balloon Satellite Sun Tracking Payload** Jan. 2023 – May 2023

- Designed and prototyped a balloon satellite payload capable of tracking the orientation of the sun and transmitting relevant data to a ground station.
- Spearheaded the construction of power and monitoring subsystems, implementing signal conditioning circuits for further signal processing via an embedded microcontroller running custom C code.
- Integrated all subsystems into a functional payload, successfully demonstrating accurate tracking during field testing.

## SELECTED HONORS & AWARDS

- Dean's List, Embry-Riddle Aeronautical University (All Terms) Fall 2020 - Present
- Diamond Eagle Scholarship, Embry-Riddle Aeronautical University Fall 2020 - Present
- Bright Futures Academic Scholarship, Florida Department of Education Fall 2020 - Present
- First Place, NASA Space Apps Challenge (Glenn Research Center) Oct. 2023
- Visionary Scholarship, American College Foundation July 2020
- President's List, Broward College Fall 2018, Fall 2019, Spring 2020
- Dean's List, Broward College Spring 2019
- Commended Student, National Merit Scholarship Corporation Nov. 2019

## SKILLS

- Programming & Analysis: MATLAB, Python, C/C++, Arduino, Microsoft Excel
- Design & Simulation: CATIA V5, Autodesk Inventor, Fusion 360, Blender, Femap
- Technical: 3D Printing, Soldering, Circuit Design, Rapid Prototyping
- Languages: English (Native), Spanish (Conversational), French (Basic Proficiency)

*References Available Upon Request*