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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 graduate degree 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 terrains, including extraplanetary environments. A confident presenter and tutor, skilled at simplifying complex concepts for learners at all levels.

EDUCATION

Embry-Riddle Aeronautical University (ERAU), Daytona Beach, Florida **Expected May 2025**
Bachelor of Science in Aerospace Engineering | Concentration: Astronautics GPA: 3.72/4.00
Bachelor of Science in Engineering Physics | Concentration: Spacecraft Systems Honors Program
- Minors: Applied Mathematics & Computer Aided Design/Manufacturing
- Academic Honors: Dean's List (All terms)

Broward College, Davie, Florida **August 2020**
Associate of Arts in Engineering GPA: 3.87/4.00
- Academic Honors: President's List (3 terms), Dean's List (1 term) Honors College
- Graduation Honors: Highest Honors, Robert "Bob" Elmore Honors College

RESEARCH EXPERIENCE

ERAU Space and Atmospheric Instrumentation Laboratory **February 2023 – Present**
Undergraduate Research Assistant to Dr. Aroh Barjatya
- Assembled and soldered payloads for GPS radiosonde balloon satellite launches.
- Tested multiple thermistor configurations for improved data accuracy in high-altitude experiments.
- Enhanced the control and monitoring system of a spin table used in rocket boom deployment testing.
- Assisted with the deployment and monitoring of GPS receivers during a nearby SpaceX Falcon Heavy launch to study ionospheric electromagnetic wave propagation.

Honeywell Aerospace / ERAU Office of Undergraduate Research **November 2022 – May 2023**
Electrical & Systems Engineering Research Assistant
- Volunteered for a collaborative research program between Embry-Riddle and Honeywell Aerospace to tackle real-world industry challenges.
- Contributed to a cross-functional team to design and implement a knowledge-based system that streamlined the diagnosis and repair of faulty inertial navigation systems.

RESEARCH INTERESTS

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

RELEVANT PROFESSIONAL EXPERIENCE

NASA John H. Glenn Research Center **August 2023 – Present**
Graphics and Visualization Lab Intern
- 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 the Advanced Air Transport Technology Project through the modeling of both conceptual electric aircraft designs and hardware prototypes.

Honeywell Aerospace **May 2023 – August 2023**
Electrical & Systems Engineering Intern
- 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 **August 2022 – Present**
Engineering & Engineering Sciences Tutor
- 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.

SELECTED HONORS & AWARDS

- Dean's List, Embry-Riddle Aeronautical University **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) **October 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 **November 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)

Additional References Available Upon Request

Supplemental Information

INDEPENDENT STUDY

Modern Robotics: Mechanics, Planning, and Control, Northwestern University **August 2023**
A 20-week course developing skills in kinematics, dynamics, motion planning, and control as it pertains to mobile robots and robotic arms, as well as in communication and analytical thinking through a series of assessments and discussions with fellow students. Taking on this multidisciplinary topic alongside my first internship has significantly improved my time management skills, while also strengthening my ability to work efficiently even under intense workloads.

Introduction to Biology: Ecology, Evolution, and Biodiversity, Rice University **August 2023**
A 13-week course that instills an appreciation for the incredible diversity of life and the interdependencies of all living things, while also exploring the many practical applications evolutionary biology has in our everyday lives. By taking a more structured approach to a topic that I already held a strong interest in, I gained a deeper understanding of the study of biology, as well as how I could use this interest to complement my engineering background and approach problems from a different perspective.

Michigan Robotics, University of Michigan **August 2023 – Present**
A series of undergraduate and graduate course offerings made freely available through GitHub and YouTube, which contain all the lecture videos, notes, textbooks, homework, projects, and exams as it relates to each course. Thrilled to have come across such an invaluable resource, I have been teaching myself these courses alongside my NASA internship, having made sure to share it with my mentor, since he coaches students for the FIRST Robotics Competition. This self-taught series offers a healthy blend of university courses, such as Computational Linear Algebra, Introduction to AI and Programming, How to Build Robots and Make Them Move, Robot Operating Systems, Mathematics for Robotics, Programming for Robotics, and Mobile Robotics.

EXTRACURRICULAR ACTIVITIES

- Advanced Humanoid Robotics Laboratory **Spring 2024 – Present**
- White Hat Eagles Cybersecurity Club **Fall 2021 – Spring 2022**
- Robotics Association NASA Lunabotics Challenge **Fall 2020 – Spring 2021**
- Game Development Club **Fall 2020 – Present**

LEADERSHIP EXPERIENCE

NASA Promoting Agency Cross-Center Connections (PAXC) **Fall 2023 – Present**
Glenn Research Center Chair
- Served as the Glenn Research Center's point of contact for PAXC, an intern-led organization that connects all NASA centers to encourage communication, knowledge-sharing, and promote a more unified NASA organization.
- Gave an agency-wide presentation, highlighting the Glenn Research Center, and showcasing current projects and research focus areas.