Hunter Quebedeaux
3687 Berry Patch Ln, Pace, FL, 32571 | (850)291-9981 | hunterq@knights.ucf.edu

OBJECTIVE STATEMENT

Hands-on, self-motivated Mechanical Engineering student interested in robotics, control systems, and dynamics seeking a meaningful project to create a positive impact on the world.

EDUCATION

The University of Central Florida – Orlando, FL *Expected Graduation: Spring 2021*

- Candidate for a **Bachelor of Science in Mechanical Engineering**.
- Candidate for a **Minor in Mathematics**
- GPA – **3.79**

Relevant Coursework – ODEs 2, INT System Dynamics and Controls, Mechanical Systems
Member of the Burnett Honors College, AIAA @ UCF, and SEDS chapter @ UCF.

EXPERIENCE AND PROJECTS

Astrodynamics and Space Robotics Laboratory – UCF, Orlando, FL *April 2018-Current*

Undergraduate Researcher

Current Projects

- Rapid Orbital Motion Emulator (ROME)
  - Investigating the use of low budget mobile manipulators using consumer electronics to emulate various control algorithms of spacecraft and other objects for defensive and educational use. Lead of the robotic manipulator hardware construction and software implementation using MATLAB.
  - Implemented both kinematic and dynamic models on robotic manipulator hardware.
  - Utilized control techniques such as gain scheduling using PID.
  - Experience using optical camera tracking systems.

Conference Papers

- 2020 AIAA SciTech Forum – Orlando, FL *January 2020*
  - AIAA-2020-1597: "Rapid Orbital Motion Emulator (ROME): Kinematics": 3rd Author; presented at session: GNC-27, Space Robotic Systems I

Senior Design Project – UCF, Orlando, FL *August 2020 – May 2021*

Volumetric 3D Printer

- Developing a novel 3D printing device which prints in all dimensions simultaneously as opposed to traditional printing methods which promises up to 20 times faster printing times at the same or high resolution.
- Lead of mechatronics implementation using Python.

Airforce Research Lab – Kirtland AFB, NM, Online *May 2020 – July 2020*

AFRL Summer Scholar

- Conducted cutting-edge research under the mentorship of United States Airforce engineers.
- Developed ROS2 node for the Robotic Orbital Control mobile manipulator testbed to simulate relative orbital dynamics of spacecraft in real time for future use in servicing mission development.
- Integrated ROS2 node into existing dynamical system in GAZEBO simulation environment.

Intercollegiate Rocketry Engineering Competition – SEDS UCF *September 2018 – July 2019*

Airframe & Simulation Design Team Member

- International competition in which students from around the world display their engineering skills to create, test, and launch a rocket to meet altitude goals of ten thousand feet.
- Contributed to the simulation of rocket dynamics sub-team by computationally analyzing the most optimal rocket parameters in a full 6-DOF MATLAB rocket simulation toolbox created by team.

SKILLS

- MATLAB
- C++
- LabVIEW
- Active Security Clearance
- Python
- LaTeX
- SolidWorks
- ROS2