

# DEVIN HUNTER

Phone: 616-690-3777

Email: [devin.hunter2017@gmail.com](mailto:devin.hunter2017@gmail.com)

GitHub: <https://github.com/devin1126>

LinkedIn: [www.linkedin.com/in/dev-hunt1126](http://www.linkedin.com/in/dev-hunt1126)

## Mission Statement

My research interests fall within the intersection of electrical and aerospace engineering, where I want to delve deeper into the study of ML-based control theory and autonomous robotics. Given these interests, I hope to pursue a prominent research role at a tech company/government agency where I can assist in developing autonomous systems capable of controlling robots that will be integral to how society works, lives, and thinks moving forward.

## EDUCATION

AUGUST 2021 – PRESENT (EXPECTED SUMMER 2027)

**DOCTORATE OF PHILOSOPHY (PH.D.)**, UNIVERSITY OF CENTRAL FLORIDA

Department: Electrical Engineering

Research Interests: Data-Driven State Estimation and Control, Reinforcement Learning, Multi-Agent Systems

Relevant Awards: McKnight Doctoral Fellowship

AUGUST 2021 – AUGUST 2025

**MASTERS OF ELECTRICAL ENGINEERING (M.S.E.E)**, UNIVERSITY OF CENTRAL FLORIDA

Concentration: Guidance, Control, and Dynamics

AUGUST 2017 – APRIL 2021

**BACHELORS OF SCIENCE (B.S.)**, EDWARD WATERS UNIVERSITY

Major: Mathematics

GPA: 3.98 (4.0 Scale)

Relevant Awards: Class Valedictorian, Summa Cum Laude, Semester Presidential Honors List for High GPA × 7

## EXPERIENCES

JUNE 2026 – AUGUST 2026

**RESEARCH INTERN**, NASA GODDARD SPACE FLIGHT CENTER (NASA OSTEM INTERNSHIP PROGRAM) , 40 HRS/WK

MAY 2023 – JUNE 2026

**RESEARCH INTERN**, AIR FORCE RESEARCH LABORATORY SENSORS DIRECTORATE (AUTONOMY TECHNOLOGY RESEARCH CENTER/SENSORS DIRECTORATE INTERNSHIP PROGRAM) , 40 HRS/WK

- Developing a deep learning-based state estimation algorithm that has exceeded performance of state-of-the-art estimation approaches in several vehicle tracking scenarios via ~32% lower estimation error
- Documented current implementation details and presenting ongoing algorithm results at several AFRL-related conferences with papers/posters accepted at NAML and SPIE machine learning conferences

AUGUST 2021 – AUGUST 2022

**GRADUATE RESEARCH ASSISTANT**, UNIVERSITY OF CENTRAL FLORIDA (NONLINEAR CONTROLS LAB), 40 HRS/WK

- Constructed a 6-DOF (degrees of freedom) simulation of a NASA HL-20 spacecraft executing an orbital Earth re-entry scenario
- Implemented a State-Dependent Riccati Equation (SDRE) guidance law into the simulation that enabled minimal energy usage during Earth re-entry which resulted in improved state tracking over baseline iLQR by ~19% and thrust energy reduction by ~50%.

JUNE 2020 – JULY 2020

**UNDERGRADUATE RESEARCH INTERN, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (ROBUST ROBOTICS GROUP), 40 HRS/WK**

- Explored the capability of a mobile wheeled robot equipped with a single HC-SR04 ultrasound sensor for the task of unmanned navigation – which showed comparable results to teleoperated navigation performance by metrics within < 7% of human-recorded driving performance statistics
- Constructed the robot and implemented the feedback control algorithm using Arduino that utilized readings from the single sensor during navigation tasks.

**JUNE 2019 – AUGUST 2019**

**UNDERGRADUATE RESEARCH INTERN, STANFORD UNIVERSITY (CHARM LAB), 40 HRS/WK**

- Developed virtual model of manipulator-equipped soft robot in Unity to simulate shared-autonomy manipulation algorithm.
- Validated algorithm in simulation with real-time physics supporting future real-world implementation.

**RELEVANT PUBLICATIONS**

**ACCEPTED**

- Hunter, D., Augsburger, J., & O'Rourke, S. (2026). "Multi-Time Scale State Estimation of Vehicle Dynamics Using Physics-Informed Neural Process." (Accepted at SPIE Defense + Security 2026)
- Hunter, D., and Enyioha, C. "Real-Time Performance Analysis of Multi-Fidelity Residual Physics-Informed Neural Process-Based State Estimation for Robotic Systems." arXiv preprint arXiv:2511.08231 (2025). (Accepted at International Conference on Robotics, Control, and Automation - ICRC)
- Hunter, D. and Enyioha, C. "Neural Process-Based Reactive Controller for Autonomous Racing." arXiv preprint arXiv:2601.12143 (2026). (Accepted at IEEE SoutheastCon 2026)
- Hunter, D. & Bowers, C. (2020). Quantifying the difference of time complexity between two probability algorithms. Edward Waters College's Undergraduate Journal on Research Across the Disciplines. 1(2), 76-97.

**UNDER REVIEW**

- Hunter, D., & Enyioha, C. (2025). Hybrid State Estimation of Uncertain Nonlinear Dynamics Using Neural Processes. arXiv preprint arXiv:2509.12522. <https://arxiv.org/abs/2509.12522>

**SKILLS**

- **Robotics Hardware/Software:** Arduino, ESP32, and ROS/ROS2
- **AI Tools:** OpenCV, OpenAI Gym, TensorFlow, and PyTorch
- **Programming Languages:** Python, MATLAB, C++, and C#
- **Control Theory Knowledge:** Optimal, Nonlinear, and Adaptive Control Theory
- **Mathematics:** Linear Algebra, Calculus, Probability Theory, and Statistics
- **Soft Skills:** Teamwork, Problem-Solving, Adaptability, Communication, and Time Management

**OTHER RELATED EXPERIENCES**

- President of Black CECS Graduate Student Group – University of Central Florida (October 2023 – October 2024)
- Member – Alpha Lambda Delta National Honors Society (October 2020 – Present)
- TRiO Mathematics Tutor – Edward Waters University (January 2020 – May 2021)
- President of the Rotaract Club – Edward Waters University (January 2020 – May 2021)
- Volunteer – FIRST Robotics Competitions (October 2017 – May 2021)