

Professional Summary

Computer Engineering senior specializing in embedded systems, robotics, and hardware – software integration. Experienced in PCB design, real-time firmware, sensor integration, and autonomous robotic systems.

Education

University of Central Florida – Orlando, Florida
Bachelor of Science in Computer Engineering
Intelligent Robotic Systems Minor

May 2026
GPA: 3.3

Relevant Coursework:

Robotic Systems, Algorithms for Machine Learning, Computer-Aided Design of VLSI, Real-Time Systems, Processes for Object Oriented Software

Software Tools and Skills

Programming: C, Python, MATLAB, Java, Verilog, Assembly, C++, HTML.
Embedded & Robotics: MCU Prototyping, FreeRTOS, ROS & ROS2, OpenCV, Sensor Integration.
Hardware: PCB Design and Assembly, Hardware Diagnostics and Analysis, Schematic Capture, CAD (Fusion 360, AutoCAD), 3D Modeling and 3D Printing.
Other skills: Database and Server Management, Document Preparation (Microsoft Office Suite)

Projects

- Marbo the Marble Bot
 - Developed ROS2-based robot navigation using ArUco marker detection.
 - Implemented pose estimation with OpenCV to guide autonomous movement.
- TURF | <https://github.com/DarkCartographer/TURF>
 - Creating an UWB-based localization system using custom PCBs and real-time firmware.
 - Implementing trilateration and wireless communication for autonomous navigation.
- Water Drop Photography Controller | <https://atulsi.com/water-drop-photography-controller/>
 - Built an ATmega328P based controller to allow for repeatable water drop collision photographs.
 - Features interval adjustment and peripheral connections for high-speed photography.
- PCB Range Finder
 - Designed and assembled an ultrasonic rangefinder based on the TI MSP430 MCU, on custom PCBs.

Experience

The DRACO Lab – University of Central Florida

Undergraduate Student Researcher

(2025 – Current)

- Conducting the design and development of a shape display research prototype, integrating embedded firmware, sensors, and pneumatic actuation for a dynamic surface.

General Engineering Supplies & Services Inc – Guyana, South America

Part time Document Preparer and CAD Drafter

(2019 – 2024)

- Prepare invoices, contracts, and tender documents, ensuring accuracy and completeness.
- Draft technical drawings in CAD based on provided specifications and sketches.