

Aditya Tejawani

Peoria, AZ 85383

Contact: autejwani@gmail.com – (602) 517-2740

LinkedIn: <https://www.linkedin.com/in/aditya-tejawani>

Portfolio: <https://sites.google.com/view/adityatejawani>

Education

University of Maryland, Senior

B.S., Computer Engineering

College Park, MD

Expected May 2027

- Robotics and Autonomous Systems Minor
- Academy of Machine Learning

Work Experience

NASA Stella – Intern

June 2026 – August 2026

- Analyzed Landsat and Sentinel-2 multispectral imagery using NDVI transects and spectral indices to assess vegetation health and validate ground-based spectrometer measurements.
- Conducted field validation of satellite observations using the STELLA handheld spectrometer, comparing in-situ measurements with remote sensing imagery.

MIRAGE Lab – Research Assistant

January 2026 – Present

- Developing a reinforcement learning model for real time adjustment of Direct Ink Write printing parameters
- Implementing YOLO-based computer vision system for defect detection during DIW printing process
- Configuring edge devices with MQTT and Node-Red to coordinate distributed control of DIW printer components

Terrapin Works – Stereolithography Technical Coordinator

January 2025 – Present

- Evaluate material characteristics to select the most suitable resin to meet application requirements
- Oversee print preparation, post-processing, and quality control
- Train students and other employees in the best practices for stereolithography printing

Technical Projects

Turtlebot Navigation

May 2026

- Utilized SLAM, ROS2, and NAV2 to map an environment and autonomously navigate to a target location using an optimized path
- Developed an attractive and repulsive potential field controller for maples navigation, enabling obstacle avoidance and goal-directed motion
- Integrated localization, path planning, and feedback controls to evaluate autonomous navigation in mapped and unmapped environments.

UR3e Pick and Place Robot

September 2025

- Programmed a pick and place 6-dof robot implementation as a part of ENME480 Introduction to Robotics class
- Implemented on UR3e robot arm platform

L1 Rocket Flight Computer

September 2025

- Designed and assembled custom flight controller PCB with barometer, IMU, magnetometer, GPS, and controlled by a Teensy 4.1 board
- Implemented I2C based sensor communication for altitude and orientation tracking up to 2000ft
- Developed firmware for storing data on an onboard SD card

VESP1.0 CPU Implementation

September 2025

- Implemented the VESP1.0 CPU architecture on the De10-Lite FPGA board using Verilog
- Verified functionality using testbench simulation and on-board testing

Semantic Segmentation of Underwater Imagery (SUIM)

July 2025

- Developed a deep learning semantic segmentation algorithm using a 93-layer U-Net architecture
- Integrated attention mechanism and data augmentation to improve feature extraction and reduce cross entropy loss
- Achieved 93%-pixel accuracy on multi-class segmentation tasks

Sign Language to Text Image Classifier

May 2025

- Developed custom CNN-based image classification model to recognize American Sign Language gestures
- Collected and preprocessed dataset of sign language images using data augmentation techniques
- Achieved classification accuracy of 98% using hyperparameter tuning

UMD Over Terrain Vehicle Project

September 2023 – December 2023

- Collaborated with a team of 8 students to design, construct, and implement an autonomous vehicle over a terrain on a budget of \$350.
- Programmed sensors to detect color, salinity, and water depth for the real-time data acquisition.

Activities

Terrapin Rocket Team – Avionics, High Altitude

August 2025 – Present

- Designed a geodesic dish antenna for video and telemetry transmission from rockets at altitudes exceeding 30,000 ft
- Conducted RF link analysis for software defined radio communication systems
- Developed wire harness and airstart control electronics for a clustered-motor rocket targeting 15,000 ft
- Designed power electronics to support simultaneous operation of airbrake, launch, and parachute deployment systems

Robotics at Maryland – Testudog

September 2024 – Present

- Designed an inverse kinematics solver for one leg of a quadruped robot using C++ and ROS2
- Currently developing motion planning algorithms using LIDAR and depth camera inputs

Eagle Scout – Troop 513

October 2014 – April 2023

- 34+ service hours helping local nonprofits and organizations.
- Held leadership roles as Patrol Leader and Troop Scribe, planning events and mentoring junior scouts

Certifications

Tripoli Level 1 High Power Rocketry Certification

- Earned Level 1 high-power rocketry certification through the independent design, fabrication, and successful flight of a model rocket
- Designed and fabricated a custom Von Karman nose cone from scratch, applying aerodynamic principles to optimize the flight performance

NASA Proposal Writing and Evaluation Experience Academy

January 2024 – April 2024

- Served as Project Coordinator for a proposed lunar radiation detection system
- Learned formal NASA-style proposal writing and interdisciplinary team coordination

Skills

Software Development: Python, Rust, Assembly, C/C++, OCAML, Java, MATLAB, Verilog, GDB, CMake, Git, VSCode

Hardware Development: MQTT, Node-Red, RTOS, STM32, ESP32, Arduino, Altera FPGA, Xilinx FPGA, I2C, SPI, UART, CAN

Test Equipment: Oscilloscope, Multimeter, Power Supply, Digital Logic Analyzer

Tools: Kicad, Pspice, OrCAD, Intel Quartus, AMD Vivado, Solidworks, SiemensNX, Gazebo, RVIZ, Jupyter Lab, Google Colab, Microsoft Office, Linux (Ubuntu)