Tejaswi Samavedula

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Education

Indian Institute of Information Technology Design and Manufacturing — Chennai, India
B.Tech in Smart Manufacturing; **CGPA: 8.47/10.00** — *Dec 2021 – July 2025*
Relevant coursework: Robotics and Automation, Analysis and Synthesis of Robot Mechanisms, Linear Algebra, Machine-to-Machine Communication, Sensors and Control, Embedded Systems, Prototyping and Testing, Production Drawing Practice, Operations Research

Experience

Mechatronics Engineer Intern — Hyderabad, India
Techolution India — *Jan 2025 – June 2025, Internship*
- Collaborated with the electronics team on PCB design, sensor positioning, and wiring optimization.
- Contributed to firmware development, assisting in integration of sensor data streams.
- Reviewed and analyzed multiple IC and component datasheets to support hardware understanding
- Designed mechanical components and mechanisms for a Robotics AI Hand, ensuring functionality, manufacturability, and seamless integration with electronics.

Research Intern — Chennai, India
Autonomous Robotics (ARISE) Lab, IIITDM Kancheepuram — *May 2024 – Dec 2024, Internship*
- Conducted research on indoor mapping and navigation using nano-drones, focusing on efficient and low-cost autonomous exploration
- Developed and tested algorithm for navigation in GPS-denied environments using ROS2 and tested in gazebo simulation and verifed through hardware implementation
- Demonstrated the research at COMSNETS 2025 Demos and Exhibits
- Proceedings were published in IEEE Xplore | *View Publication*

Team Captain — Chennai, India
Astra IIITDM - Aerial Robotics Team — *Jan 2024 – Dec 2024, Part-time*
- Led a 24-member interdisciplinary aerial robotics team that participated in SAE AeroTHON 2024.
- Contributed to the development of an autonomous navigation stack for a quadcopter drone using ROS2 and PX4 flight stack.
- Worked extensively with Jetson Orin Nano and interfaced with the PX4 Autopilot flight controller
- Integrated FrSky radio telemetry modules for real-time manual override and system monitoring.

Projects

Design and Development of TRACE Device | *C++, CAD Modeling, ESP32, PlatformIO, FreeRTOS* | GitHub
- Developed TRACE (Tool for Rapid Analysis, Calibration and Evaluation) Device (v1), a custom-built, handheld multi-sensor system for capturing orientation, distance, and directional data in real-time.

Circuit Design and PCB Layout for an STM32-Based Board | *Altium Designer, STM32, PCB Design* | GitHub
- Designed a STM32 based board that incorporates basic peripherals and a DC-DC converter for voltage step-down. Designed a 4-layer PCB with Altium Designer

Indoor Obstacle Avoidance and for Drones | *Crazyflie, Python, PX4, ROS2, Gazebo* | GitHub
- Developed ROS2 based Indoor Obstacle Avoidance and Navigation ROS2 algorithm for Crazyflie nano-drones using crazyswarm2 library and Multiranger sensor. Simulated in Gazebo environment and then implemented on hardware.

Skills

Languages/Frameworks: C/C++, Python, ROS2

Areas: CAD, PCB Designing

Developer tools: Git, Docker, Bash, Github

Software: Altium Designer, PlatformIO, SolidWorks (CSWA)

Hardware: ESP32, STM32, Arduino

Awards & Achievements

Prototyping Project 1st Prize: Was awarded by the Director of IIITDM Kancheepuram for the project "Multi-Utility Measuring Pen".

Hack the Innovative Future, Ideathon Team Award 1st Prize: Organized by the Embassy of Japan in India.