ASHWIN DISA

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Worcester, MA

Objective: Summer Internship 2024 in Robotics Engineering.

EDUCATION

Worcester Polytechnic Institute (WPI) — Worcester, MA
Master of Science, Robotics Engineering — 2023 - 2025
Manipal Institute of Technology — Manipal, India
Bachelors in Technology, Aeronautical Engineering, CGPA: 8.67/10.00 — 2019 - 2023

TECHNICAL SKILLS

Programming	C/C++, Python, Lua
Softwares	ROS/ROS2, MATLAB/Simulink, Gazebo, CoppeliaSim
Tools and Libraries	OpenCV, NumPy, SciPy, Matplotlib, pymavlink
Design and Analysis	Fusion 360, SolidWorks, 3DExperience, ANSYS
UAV Ecosystem	PX4, Ardupilot, QGroundControl, MAVLink, MAVROS

EXPERIENCE

Research Intern - **Robotics Research Center**, **IIIT Hyderabad** — Dec 2022 - May 2023

- Worked on path planning and communication pipeline of a **Drone interception system**. Hardware setup included CubeOrange FCU with ArduPilot firmware and RaspBerry Pi as the companion computer.
- Path planning of **SWARM** system (5 drones) for FOD detection. Implemented Hybrid Reciprocal Velocity Obstacle for obstacle avoidance and DFS algorithm for coverage. Simulated in gazebo environment.

Summer Intern - **E-Yantra**, **IIT Bombay** — Jun 2022 - Jul 2022

- Implemented LQR controller on a quadcopter and PID controller on an **Omnidirectional Micro-Aerial Vehicle (OMAV)** i.e a co-axial hexacopter with tiltable rotors.
- Tested the controllers by performing trajectory tracking in simulation environment.

Research Assistant - **Manipal Institute of Technology** — Dec 2021 - Sep 2022

- **Multi-robot Coverage Path Planning** (MR-CPP). Implemented voronoi partitioning technique to divide and assign areas to the robots and applied the depth first search algorithm for coverage path planning to cover the designated areas.

PUBLICATIONS

- **A. Disa** and V. G. Nair, "Autonomous Landing of a UAV on a Custom Ground Marker using Image-Based Visual Servoing," IEEE INDISCON 2023. link, paper.

ACHEIVEMENTS

- **Winner** of theme DairyBike out of 242 teams, in the **E-Yantra Robotics Competition 2021-22**, hosted by IIT Bombay.
- Team ranked 18th overall and 2nd best in Flight Readiness Review out of 71 teams in the **AUVSI SUAS Competition 2022**.