

# ADITYA SHINDE

UAV & DRONE SYSTEMS ENGINEER | FPV DRONE PILOT  
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## SUMMARY

UAV Systems Engineer with hands-on experience in FPV drones, autonomous quadcopters, flight tuning, and UAV integration. Skilled with PX4, Ardupilot, Pixhawk, SpeedyBee, and CrossFlight flight controllers, along with Mission Planner, QGroundControl, MAVLink telemetry, C/C++, and Linux workflows.

Vice-Captain & Lead Pilot of RC Drone Club with 2+ years of FPV experience, securing **World Rank 3** in Technoxian 2025. Passionate about building reliable UAV platforms integrating control systems, sensing, telemetry, and embedded electronics.

## EXPERIENCE

### Design and Automation Intern – VVS System and Solution

Jan 2025 – Apr 2025

- Developed precise CAD models using AutoCAD and Fusion 360 for optimized design and maintenance.
- Designed and automated pneumatic switch systems for utility vehicles, improving operational efficiency.

### Team Lead – UAV & Drone Projects, Team Vajra (MMCOE)

2023 – Present

- Led the drone team piloted the drone to achieve World Rank 3 in FPV drone racing competition.
- Managed end-to-end UAV development using Pixhawk, APM, and SpeedyBee flight controllers.
- Supervised flight tuning, testing, and integration of embedded and automation systems.
- Guided team members in UAV electronics, autonomous navigation, and mission execution.

## PROJECTS

### Autonomous Quadcopter – Delivery Application

- Built an autonomous delivery drone using **CrossFlight flight controller** and **custom low-cost telemetry**.
- Implemented **waypoint navigation** and mission execution via **Mission Planner**.
- Integrated MAVLink telemetry for real-time ground control monitoring.
- Optimized UAV for short-range logistics and stable autonomous flight.

### Low-Cost HC-12 Telemetry Kit for UAVs (800 m – 1 km)

- Developed a budget telemetry system using HC-12 (433 MHz), reducing cost by 70% vs commercial MavLink kits.
- UART integration with Pixhawk/CrossFlight for GPS, battery, attitude, and status telemetry.
- Achieved reliable 800 m – 1 km LOS link through antenna/serial optimization.
- Lightweight plug-and-play design validated on an autonomous delivery drone.

### 5-Inch FPV Racing Drone – High Performance Build

- Designed & assembled a performance-tuned 5-inch drone using **SpeedyBee F405 V3**.
- Performed **advanced PID tuning** for agility, speed, and flight precision.

### 3-Inch Micro FPV Drone – Confined Space Navigation

- Built a lightweight 3-inch FPV platform optimized for indoor and tight-space flying.
- Tuned for stability, low-latency response, and efficient power usage.

### Autonomous Water Surface Cleaning Bot — SIH 2024

- Designed an autonomous surface cleaning bot in **Fusion 360** with real-time mobile control.
- Achieved **1st Rank in Internal SIH** for innovative eco-friendly automation.

## INTERESTS

- UAV & Drone Systems:** FPV Drone Racing, Flight Tuning, Autonomous Navigation, Telemetry Integration, Ground Control Systems, Mission Planner, BetaFlight
- Design & Automation:** AutoCAD, Fusion 360, Pneumatic Systems, Mechanical Design, Automation Prototyping
- Embedded Systems:** Microcontrollers, Sensors & Actuators, Circuit Design, Hardware Integration
- Programming & Tools:** Arduino IDE, MATLAB (Basics), Soldering & PCB Handling
- Soft Skills:** Team Leadership, Project Management, Problem Solving, Technical Documentation

## ACHIEVEMENTS

**World Rank 3 & AIR 2** – Technoxian Drone Racing 2025 (32 international teams)

**Cleared Level 2** – AeroGCS Global Competition

**2nd Place** – MMCOE Dexterity 2K24 Drone Racing Simulator

**1st Place** – Uddan 2K23 Drone Competition

**4th Place** – AISSMS Silicon Fusion – Air-o-rush Event