Moksh Dandotiya

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Education

Madhav Institute of Technology and Science — Gwalior, MP
B.Tech in Information Technology (AI and Robotics) | CGPA: 7.80/10 — *2022 – 2026*

Experience

UAV & AI Intern — Sep 2026
Indian Army — *Remote*

- Forked and customized QGroundControl (QGC) to implement a tap-to-track interface, converting touchscreen target coordinates into MAVLink guided commands to autonomously follow vehicles and personnel.
- Formally invited by unit leadership for on-site UAV & AI software integration in Jammu & Kashmir.

Robotics Engineer & GCS Operator — Apr 2026 – Sep 2026
Vyom Drones Pvt. Ltd. (GadgetsDeal.in) – SUAS 2026 Industry Partner (USA) — *Gwalior, MP*

- Architected a 20ms UDP telemetry and low-latency RTSP video pipeline, routing camera feeds through the Jetson Orin NX to the Herelink GCS with sub-200ms latency.
- Engineered a 1-meter precision autonomous airdrop, optimizing NanoOWL via FP16 TensorRT on an overclocked Jetson Orin NX (MAXN profile) for real-time target detection and tracking.
- Developed a full-mission HITL simulation pipeline, using ROS 2 to serialize C++ YDLidar point clouds into MAVLink for ArduPilot BendyRuler navigation.

Perception & Backend Engineering Intern — Apr 2026 – Jun 2026
Zetagon (Elytrus Pvt. Ltd.) — *Remote*

- Engineered a Mask R-CNN pipeline automating detection across 120,000+ solar modules per orthomosaic, replacing a fully manual inspection process.
- Developed a geospatial mapping engine translating CAD blueprints into real-world coordinates, fusing DJI drone telemetry for physical thermal defect detection.
- Integrated C++ DJI SDK binaries to extract radiometric sensor data, deploying a decoupled PostgreSQL and FastAPI backend on AWS to eliminate API latency.

Projects

Jatayu VTOL | *Autonomous Air-Ground SAR System* | git.new/jatayu — 2026

- Engineered an RT-DETR edge-perception pipeline on live MJPEG streams, implementing posture classification to auto-geotag and prioritize distressed survivors.
- Developed a GPS-denied rover on an NVIDIA Jetson Nano using ROS 2 SLAM Toolbox and Nav2, translating VLA inferences via MoveIt 2 to drive a 6-DOF robotic arm for debris clearance.
- Configured ArduPilot firmware on a 2-meter hybrid VTOL, architecting a React/FastAPI GCS over MAVLink/WebSockets for mission control across a 2hr/148km cruise.

Vision Edge | *Autonomous FOD Detection and Removal System* | git.new/visionEdge — 2025

- Architected a multi-agent system (quadrotor & UGV) evaluated at Gwalior Air Force Station, programming an EKF geo-projection pipeline to map 2D pixels to 3D geodesy.
- Engineered an edge-perception pipeline on an NVIDIA Jetson Nano, training a TensorRT YOLOv11 model on a 50,000+ image dataset with ByteTrack for real-time FOD tracking.
- Developed a ROS UGV on an NVIDIA Jetson Nano with a custom TSP path planner and Blind Sweep mechanism, programming magnetometer filters to isolate motor interference.

Smart Donation Box | *Embedded Vision* | *Client: Green Rider Technologies* | git.new/smartDonationBox — 2024

- Developed C++ embedded firmware on an Arduino Mega, orchestrating 4 servos, an ESC, a drone motor, and vibration actuators to physically singulate clumped notes.
- Built a currency pipeline integrating ByteTrack, YOLOv11n-OBB, and OpenCV HSV filters to persistently ID, classify, and tally 9-10 overlapping mixed notes without OCR.

Technical Skills

Languages: C/C++, Python, TypeScript, SQL
AI, Vision & Simulation: PyTorch, TensorRT, OpenCV, YOLO, RT-DETR, Mask R-CNN, ByteTrack, Gazebo, MuJoCo
Robotics & UAV Systems: ROS 1/2, ArduPilot, QGroundControl, iNAV, Betaflight, MAVLink, Nav2, CMake
Hardware & Backend: NVIDIA Jetson (Orin/Nano), STM32, UART/SPI/I2C, EKF, FastAPI, AWS, Docker, Tailscale

Achievements

Winner (1st Place, INR 1,00,000) – Built an autonomous human-following drone,
placing IIT Roorkee as 1st runner-up (Nov 2026)
Certified Flight-Ready (16th Global Qualifier), Student Unmanned Aerial Systems (SUAS) 2026, USA – Competed alongside Lockheed Martin & Northrop Grumman sponsored teams
Commendation for Exceptional Technical Proficiency – Zetagon Internship (Perception & Backend)
Winner, Hacksagon 2025 & 2026, IIITM Gwalior – Projects Jatayu & Vision Edge (Disaster Management Track)
Official FAA Recreational UAS Safety Test (TRUST) Certification – Embry-Riddle Aeronautical University