Sashank Erukala

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SUMMARY

Aerospace Engineer & Graduate Trainee with a strong foundation in UAV dynamics and control systems. **GATE 2025 Qualified (Rank 609)**. Proficient in Aerial Robotics development using **ROS 2, PX4, and Embedded Systems**, with hands-on experience in system integration, autonomous navigation and computer vision.

WORK EXPERIENCE

Graduate Engineer Trainee — SkyTex Unmanned Aerial Solutions   July 2025 – Present
– Developed autonomous flight stacks using **PX4 and ROS 2**, integrating Edge Devices for precision navigation.
– Integrated different avionics systems and performed log analysis to optimize system stability and control performance.

UAV Design Intern — NSIC   June 2024 - July 2024
– Designed and fabricated agricultural UAV airframes, assembling heavy-lift propulsion systems for payload operations.
– Conducted stability flight tests to validate structural integrity and performance.

PROJECTS

GPS-Denied Autonomous Navigation   *Isaac ROS, PX4, Embedded*

Integrated Isaac Ros Visual Slam with PX4 to fuse visual odometry for precision position hold and drift-free state estimation in GPS-denied environments.

Aerial Interceptor UAV & Custom GCS   *ROS 2, C++, Qt*

Developed an interceptor algoritm for fixed-wing UAVs with APN guidance and PX4. Modified QGroundControl (QGC) source code to create a custom interface for real-time target interception.

AI-Powered Object Following Drone   *YOLO, ROS 2, Python*

Developed a control loop with ROS2 and YOLO for realtime object detection and tracking by translating bounding box coordinates into velocity commands (Visual Servoing) for the PX4 flight stack.

ESP32 Flight Controller Design   *KiCad, Embedded C++*

Designed and tested a custom 4-layer ESP32 flight controller. Developed the complete firmware stack including sensor fusion, stabilization and motor mixing.

PUBLICATIONS

2025   **Technical Framework for Human Detection Using Multirotor Aerial Vehicle in Virtual Environment**
ETAAV - 2025 Conference
Proposed a simulation-based framework for detecting humans using UAVs, integrating PX4 autopilot with computer vision algorithms in a virtual environment.

CERTIFICATIONS AND ACHIEVEMENTS

2025	**GATE 2025 Qualified**	*All India Rank 609 (Aerospace)*
2025	**Drone Systems and Control**	*NPTEL (IISc Bangalore)*
2024	**Deep Learning for Computer Vision**	*NPTEL (IIT Hyderabad)*
2024	**Introduction to Machine Learning**	*NPTEL (IIT Madras)*
2019	**NTSE Scholar (National Talent Search Examination)**	*NCERT, Govt. of India*

EDUCATION

2021 - 2025	B.Tech Aerospace Engineering at **Amrita School of Engineering**	(CGPA: 8.27)
2019 - 2021	Class XI and XII at Sri Chaitanya Junior College	(Marks: 96.4%)
2018 - 2019	Class X at Sri Chaitanya High School	(GPA: 10.0)

SKILLS

Robotics	ROS 2, Isaac ROS, Isaac Sim, PX4, ArduPilot, Gazebo, NAV2, SLAM
Design	KiCad, Fusion 360, SolidWorks, MATLAB, Simulink, ANSYS
Programming	Python, C++, Embedded C, Qt, LaTeX