Yash Srivastava

Portfolio: yash14s.github.io | GitHub: github.com/yash14s | LinkedIn: linkedin.com/in/yash14s
srivastavayash14@yahoo.in | (470) 923–6909 | Alpharetta, GA | Open to Relocation

PROFESSIONAL SUMMARY

UAV autonomy and robotics systems engineer with graduate training from Georgia Tech and hands-on experience designing, building, and integrating end-to-end UAV platforms and multi-UAV systems. Strong background in PX4 ArduPilot-based flight stacks, ROS2, MAVLink, and simulation-to-hardware workflows. Proven experience in multi-sensor fusion, collision avoidance, and autonomy validation across SITL, hardware deployment, and real-world field environments.

EDUCATION

Georgia Institute of Technology - Atlanta, GA — GPA: 3.93
Masters in Robotics (Artificial Intelligence, Control Systems, Perception) — *Aug 2022 – May 2024*

Vellore Institute of Technology - Chennai, India — GPA: 9.03/10
Bachelor of Technology, Electronics and Computer Engineering — *July 2018 – May 2022*

SKILLS

UAV Autonomy & Flight Stacks: PX4, ArduPilot, MAVLink, SITL, Mission Planning, Waypoint Navigation
Robotics & Controls: State Estimation, Sensor Fusion, Motion Planning, Controls, Mobile Robots, UAVs, Multi-Agent Systems
Perception & ML: Computer Vision, Deep Learning, YOLO, OpenCV, NumPy, PyTorch
Programming: Python, C++, MATLAB
Embedded Systems: Raspberry Pi, Arduino, ESP32, Pixhawk
Systems & Tools: ROS2, Docker, Gazebo Sim, Linux, Git

EXPERIENCE

Robotics Engineer (GROWTTH) - Freudenberg NOK Sealing Technologies, *Cleveland, GA*   Mar 2025 – Jan 2026

- Designed and deployed a real-time monitoring system integrating through-beam sensors and embedded logic, improving system availability and throughput by 25%.
- Led development of a Kanban-based inventory monitoring system, owning software and sensor interfacing, and coordinating hardware integration; delivered $1.2k annual labor savings and reduced production stoppage risk.

Systems Engineer Intern - DroneUp, *Virginia Beach, VA*   June 2023 – Aug 2023

- Developed and validated a PX4-SITL–based UAV autonomy proof-of-concept using Artificial Potential Fields for collision avoidance, integrating MAVLink-based communication and mission execution; coordinated LTE antenna deployment for long-range (BVLOS) operations.

Robotics AI R&D SWE Intern - United Parcel Service, *Atlanta, GA*   Jul 2024 – Mar 2025

- Built and deployed an AI-based human parcel counting system using YOLOv8 pose estimation, designing a real-time computer vision pipeline processing warehouse-scale video streams with >85% accuracy.

Graduate Teaching Assistant - Georgia Institute of Technology   Aug 2023 – May 2024

- Supported 50+ graduate students across robotics disciplines through instruction, grading, and office hours, and maintained a fleet of 45+ TurtleBot3 AMRs, including creating and deploying a standardized OS image for reliable lab operation.

SELECT PROJECTS

Drone Surveillance System for Poachers and Wildlife
Advisor: Dr. Hemanth C. (VIT Chennai)

- Designed, built, and integrated a complete quadrotor UAV platform from scratch, owning airframe and propulsion selection, ESC–motor matching, battery sizing, GPS and sensor integration, and companion computer bring-up using a Raspberry Pi–Arduino setup.
- Integrated the ArduPilot flight control stack and MAVLink communication, implementing GUIDED-mode waypoint navigation and a two-layer collision avoidance pipeline using stereo vision and ultrasonic distance sensing for autonomous operation in forested environments.
- Developed a Dockerized Gazebo-based simulation to validate autonomy and safety behaviors prior to hardware deployment; conducted field testing to verify robustness under real-world sensing noise, communication delays, and environmental constraints.

Quadrotarium: Testbed for Remotely Accessible Aerial Swarms
Advisor: Dr. Sean Wilson (Georgia Institute of Technology)

- Developed the core software and systems infrastructure for a ROS2–based Crazyflie swarm drone testbed at Georgia Tech.
- Enabled 24×7 autonomous drone operations by implementing a FSM-based scheduled charging system with Barrier Certificates for collision-free trajectories.

Multi-UAV Formation Control for Scalable Last-Mile Logistics
Advisor: Dr. Chaouki T. Abdallah (Georgia Institute of Technology)

- Implemented distributed control laws for a swarm of UAVs to rendezvous, form desired geometric formations, and collaboratively transport payloads to a target location.
- Built a full simulation environment using the ArduPilot–Gazebo plugin and validated autonomy behaviors via DroneKit-Python and translated theoretical formation control and coordination models into executable onboard control logic for multi-vehicle systems.

UWB-Based Indoor Localization and Tracking
Advisor: Dr. Ashutosh Dhekne (Georgia Institute of Technology)

- Developed a low-cost indoor localization system using Ultra-Wide Band (UWB) and embedded system programming.
- Added a layer to the Two-Way Ranging protocol to sync 8 UWB beacons, achieving centimeter-level XY localization accuracy.
- Demonstrated reliable real-time tracking with a 94% average packet response rate and an 8 Hz update frequency.

Navigation using Computer Vision and Machine Learning for AMRs

- Designed a Finite State Machine (FSM)-based navigation algorithm for differential-drive AMRs in GPS-denied environments using ROS2, leveraging LiDAR distance data and dead reckoning for collision avoidance.
- Implemented edge-deployed road sign detection using a trained SVM classifier, selected for higher accuracy and real-time performance, achieving 90% accuracy for perception-driven decision making.

RESEARCH & PUBLICATIONS

- **IEEE Access (2024)** — "*Unmanned Aerial Surveillance and Tracking System in Forest Areas for Poachers and Wildlife.*"
- **Outstanding Presentation Award** — "*Autonomous Bot with ML-Based Reactive Navigation*", Robotics, Intelligent Automation and Control Technologies (RIACT) 2021 (Conference).
- "*Water Care: Water Surface Cleaning Bot and Water Body Surveillance System*" – presented in RIACT 2021
- "*Two stage Deep Stacked Autoencoder with Shallow Learning for Network Intrusion Detection System*"

ACHIEVEMENTS

- **IEEE Photonics Project Expo 2021** — 1st Prize for Autonomous UAV Flight.
- 1st place in Sant Longowal Institute of Engineering and Technology's TechFest'21.
- **Avionics Lead**, Team Aviators International (VIT Chennai) — Led development of the team's first autonomous drone.
- **SAE Aero Design Challenge 2019** — 3rd Prize, Best Innovation Award.

SELECTED COURSEWORK

Robotics & Control: Linear Control Systems, Networked Control Systems, Mobile Manipulation, Aerial Robotics
AI & Perception: Artificial Intelligence, Computer Vision, Deep Learning, Machine Learning
Systems & Embedded: Operating Systems, Embedded System Design, Cyber-Physical Systems, Mobile Computing, IoT
Data & Computing: Data Structures and Algorithms, Big Data Analytics, Cloud Computing

CERTIFICATIONS

Robotics: Aerial Robotics – UPenn
Google Cloud Platform Fundamentals
Google Kubernetes Engine (Foundations)