



Yash Thummar

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ABOUT ME

Aerospace Engineer with expertise in the **full project lifecycle** of **aerospace systems**, from concept to flight-ready deployment. Bridges **product vision** and **market needs** with hands-on execution in **AI**, **simulation**, and **flight control systems** to deliver innovative, **user-centric solutions**.

EDUCATION AND TRAINING

5 NOV 2024 – CURRENT Darmstadt, Germany

M.SC. AEROSPACE ENGINEERING Technische Universität Darmstadt

15 JUL 2019 – 10 JUN 2023 Bhopal, India

B. TECH AEROSPACE ENGINEERING VIT University

Final grade 1.72

WORK EXPERIENCE

 **BLUJ AEROSPACE PRIVATE LIMITED** – HYDERABAD, INDIA

Website blujaero.com

FLIGHT TESTING AND CONTROL ENGINEER – 1 SEP 2023 – 23 OCT 2024

- Developed **Pixhawk firmware** for custom airframe using a **Linux development environment** and simulated in **Gazebo**.
- **Calibrated and tested a 450 kg VTOL aircraft**, executing an Auto mission for final validation.
- **Implemented PDI model** for **Veronte flight controller** for custom VTOL control and simulated in **X-Plane 11**.

 **AERO2ASTRO** – CHENNAI, INDIA

RESEARCH INTERN – 1 MAY 2021 – 1 NOV 2021

- Designed and analysed the internal structure design of cryogenic propellant tanks, and evaluated various alloys and composite materials using the **Autodesk Fusion 360 software's design and structural simulation(FEM) workspace**.

PROJECTS

12 MAY 2025 – 22 JUL 2025

Autonomous UAV Navigation and Mission Planning

- Developed and deployed a **C++ 360° LiDAR-based detect-and-avoid** system using **ROS2**, validating **autonomous navigation** via **Gazebo/PX4 simulation** and **live flight tests** on a Quadcopter with **Raspberry Pi** and **Pixhawk**.
- Engineered a **UAV medical delivery mission** by performing a **SORA-based risk assessment** and implementing the **3D flight path** and **geofence** in **QGroundControl**.

1 MAY 2022 – 15 MAR 2023

Conceptual Design and Analysis of an eVTOL Aircraft

- Developed a conceptual design of a **tiltrotor eVTOL** aircraft with **220 km/h cruise speed** and **250 km range** with a payload capacity of 4 people (400kg) and analysed using the SUAVE package and a Python programming language.
- Optimized eVTOL base design using **SciPy SLSQP optimization algorithm** that improved **aerodynamic performance by 6%**.

Link <https://yashthummar.wixsite.com/portfolio/evtol>

● PUBLICATIONS

Foldable Quadcopters: Design, Analysis, and Additive Manufacturing for Enhanced Aerial Mobility

- Designed a **Compact & Foldable CAD design** of a quadcopter using the **Autodesk Fusion 360** software and **3D printed** it using **Cura software** and the Ender 3 Pro FDM 3D printer with ABS filament.
- Programmed the **Pixhawk flight controller** using open-source software Mission Planner and **added FPV system** and **optical flow sensor**.
- Achieved **stable flight** with a **1 kg payload** and a **30-minute flight** duration in GPS and GPS-denied conditions.

Thummar, Y. H., & Alam, M. I. (2024). Foldable Quadcopters. In Unmanned Aircraft Systems (pp. 477–518). Wiley. <https://doi.org/10.1002/9781394230648.ch12>

● SKILLS

Programming & Simulations

Python, SciPy, SUAVE, Gazebo, ROS2, Machine Learning, Ubuntu Linux, Docker, n8n

Flight Control & Hardware

Pixhawk, Raspberry Pi, Mission Planner, QGroundControl, UAV Systems, Drone Pilot

3D Design & Manufacturing:

Fusion 360, 3D Printing, Cura (Ultimaker), Siemens NX

Software

NASA OpenVSP, XFLR5, ANSYS Fluent/ FEA, Matlab/Simulink, Microsoft Office, Latex

Soft Skills

Time Management, Communication, Problem-Solving, Teamwork, Analytical Thinking, Idea Exchange

● CERTIFICATIONS

Remote Pilot Certificate (Small and Medium class Rotorcraft) authorized by DGCA India

Autodesk Fusion 360 Certified User Badge authorized by Autodesk

Link <https://www.credly.com/badges/483e1144-a202-482b-8830-a9f636ebe09f>

Specialization in Machine Learning authorized by DeepLearning.AI and Stanford University

Link <https://www.coursera.org/account/accomplishments/specialization/GR6RGQ5NB4VX>

Financial Management for Product Leaders by University of Maryland, College Park

● ORGANISATIONAL SKILLS

UAV Workshop

Organized UAV workshop under SAEINDIA Collegiate Club VIT BHOPAL in collaboration with Team Tarkshya, took a session on drone programming and demonstrated the drone flight at VIT Bhopal University. (13 April 2023) <https://yashthummar.wixsite.com/portfolio/events>

Drona event in AdvITya22

Led Drona event in AdvITya22 College technical fest at VIT Bhopal University. (22 April 2022)

● LANGUAGE SKILLS

English – C1 (Fluent), German – B1 (Intermediate), Hindi, Gujarati (Mother tongue)