Piyush Kumar

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Certifications

- VITyarthi Certification on Python and Fundamentals of AI & ML
- STK Software Course Completion
- Agnirva Space Internship Program

Education

Vellore Institute of Technology, Bhopal – B.Tech in Aerospace Engineering — Aug 2022 – Ongoing
- CGPA: 8.03/10

Modern Vidya Niketan, Faridabad, Haryana – Class XII — 2022
- Percentage: 75%

St. Columbus School, Faridabad, Haryana – Class X — 2020
- Percentage: 88%

Technical Skills

Languages: Java, JavaScript, HTML, CSS, SQL (SMS)

Tools/Software: ReactJS, Fusion 360, CATIA, STK, Git

Projects

Forward-Swept Wings in Commercial & Small Aircraft — 2023–2024
- Designed and prototyped a 1:20 scale wing section with 10° forward sweep to explore stall delay and maneuverability.
- Conducted wind-tunnel testing to map lift, drag, and stall characteristics.
- Validated experimental data and optimized structural layout via CFD and CAD/CAM workflows.

Air-Breathing Hypersonic Scramjet Engine — 2024
- Led theoretical and experimental development of a scramjet capable of stable combustion at Mach>8.
- Optimized inlet and combustion-chamber geometry using CFD (ANSYS Fluent).
- Built lab-scale prototypes for combustion-stability tests and performed high-speed wind-tunnel experiments.
- Validated performance through STK mission simulations.

Compact Foldable Drone (DJI Mavic Clone) — Mar 2025 – Ongoing
- Designed ultra-compact, foldable drone frame modeled on DJI Mavic in Fusion 360.
- Re-engineered arm-fold mechanisms and central fuselage, reducing cost by 75% while retaining full flight and payload capabilities.
- Performed FEA to ensure 2 kg payload support.

Aerospace CAD & Simulation Suite — 2023–2025
- Self-initiated designs of quadcopters, folding drones, UAV frames, and palm-sized drones using AutoCAD, Fusion 360, and CATIA.
- Ran structural and modal analyses in ANSYS; mission-profile simulations in STK.
- Compiled comprehensive technical reports documenting design methods and performance results.

Experience

Drone Frame Designer Intern, AirM Pvt. Ltd. (Remote) Mar 2025 – Ongoing

- Designed drone frames using Fusion 360, Catia, and FEA tools.
- Performed structural integrity calculations to support up to 2kg load.
- Led a team during internship; managed tasks and design collaboration.

Research Intern, Aeronautical Society of India, Bangalore (On-site) Oct 2024

- One-week internship focusing on aerospace technologies and UAVs.
- Gained hands-on experience in drone systems and aeronautics tools.

Achievements and Extracurriculars

- 3rd prize in Rocket Launching Event (KARMAAN) using custom-built rocket.
- Hands-on experience visit to mechanical and automobile industries in Chennai.
- Core Technical Member of Blockchain Club, VIT Bhopal (Jul 2023 – Present)