Nitya Srivastava

Aerospace Engineering Student, IIEST Shibpur
linkedin.com/in/nityasrivastavaa

nityasri8726@gmail.com
+91-9559123501

Education

B.Tech in Aerospace Engineering **2023 – 2027 (Expected)**

Indian Institute of Engineering Science and Technology (IIEST), Shibpur
CGPA: 8.38/10 (to date)
Relevant Coursework: Aircraft Dynamics & Control, Structural Mechanics and Vibrations, Propulsion, Orbital Mechanics, Flight Mechanics, Aircraft Performance, Advanced Strength of Materials, Wind Tunnel Testing, Fluid Mechanics, Thermodynamics, Viscous Flow, Low and High Speed Aerodynamics, Numerical Methods and Computational Tools

Technical Skills

- **Modeling & Simulation:** CFD (ANSYS Fluent), MATLAB/Simulink, XFLR5, XFOIL
- **Programming:** MATLAB, C, C++, Python, ROS, Arduino
- **CAD & Design:** SolidWorks, Fusion 360, CATIA V5, 3D modeling
- **Instrumentation & Lab Skills:** Wind-tunnel operation, airfoil flow and propeller testing, flow visualization, mechanical testing (tension, torsion, hardness), servo and position-control experiments, robotic arm actuation, vibration and thermal sensor usage, data acquisition, 3D printing

Internships & Projects

Student Research Intern, Space Systems Lab - IIT Kanpur **Ongoing**
Hovering System for Lunar Lava Tube Exploration

- Conducting literature survey on lunar lava-tube terrain, reduced gravity, and navigation constraints for subsurface missions.
- Studying feasible hovering and landing system concepts and identifying key factors influencing stability, sensing, and control.

Research Intern, Unsteady Aerodynamics Lab - IIT Kanpur **December 2025**
Dragonfly-Inspired Flapping Robot: Preliminary Design and Aerodynamic Analysis

- Working on the conceptual design and aerodynamic analysis of a dragonfly-inspired flapping-wing robot.
- Studying wing kinematics, lift generation mechanisms, and vortex phenomena (LEV, flapping frequency, phase differences) using literature review and analytical models.

Research Intern - IIT Dharwad **Summer 2025**
Aerodynamic Optimization of Metallic Fan Blades

- Industrial CFD project focused on simulating metallic fan blades under specified operating conditions.
- Created multiple blade designs through parametric variation of geometric angles for performance optimisation.
- Analysed flow behaviour, separation characteristics, and aerodynamic efficiency of rotating machinery.

Space Tech Trainee - India Space Lab **Summer 2025**
Drone Technology, Space astronomy, CubeSat & CanSat

- Completed online training on UAV technology and classifications.
- Learned fundamentals of CubeSat and CanSat subsystem design.
- Gained exposure to basic remote sensing and space engineering concepts.

Projects & Academic Work

Minor Project: Modal Decomposition of Vortex Shedding behind a circular Cylinder **October 2024**

- Analysed unsteady wake dynamics and drag-induced vibrations for flow past a bluff body.
- Applied POD, SPOD and FFT (Welch's method) to lift/drag signals to extract dominant modes.
- Investigated energy distribution of coherent structures and generated animations of modal behaviour.

Achievements

- Ranked in the top 10% of class.
- Selected for students research internship at IIT Kanpur, IIT Madras and IIT Dharwad

Research Interests

Aerodynamics, wind tunnel testing, stability and control of mechanical systems, servo modelling, flight mechanics, thermo-mechanical systems, computational fluid dynamics (CFD), UAV and RC aircraft design, drone dynamics, 3D printing and prototyping, reduced-order modelling (POD, SPOD, FFT), and space astronomy.

Co-curricular Activities

- Participated in national-level space science and engineering workshops.
- Built simple prototype systems including a water rocket and a small hovercraft.