

# Sugam Lamsal

Aerospace Engineer

## CONTACT

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## EXPERIENCE

### Intern - Airbus India | 2025/07/29 - 2026/01/30

In-Service Engineering | Structural Repair

- Built repair-engineering toolkits supporting automated SAS generation, Generic Repair Justification database, Check-stress database, LR main landing gear support rib fatigue life and repair.
- Repair sketch for trailing edge overhang panel.
- Assisted on fatigue justification for repairs to LR MLG Support Rib Lugs.
- Built a Google Site for the daily necessary trackers, planners, toolkits.
- Auto annotated blot location diagram of wing skin panel.

### Project Intern | 2025/02 - 2025/06

FOSSEE (Free / Libre Open Source Software for Education)

- Developed and tested 2D simulations of flow around a moving elliptical airfoil and NACA0012 inside a channel using Immersed Boundary Method (IBM) in OpenFOAM and using ParaView for analysis and visualization.

### Research Intern | 2024/10 - 2024/11

Propulsion Laboratory, IIT Bombay

- Gained hands-on experience in preparing and testing solid and gas-generating propellants using CV, Crawford Bomb, and Quench Bomb tests to analyze burn rate, thermal stability, and combustion behavior.

## EDUCATION

### IOE Pulchowk Campus | 2021-2025

Bachelor in Aerospace Engineering

- Average Percentage: 76%
- Coordinator: Glider Competition - MechTrix 2080
- Organiser: XFLR5 and OpenRocket Workshop
- Sub-coordinator: Aero Section - MechTrix 2079

## RESEARCH

### Optimization and Comparison of Subsonic and Hypersonic Control Surfaces of Rockets (Conference Paper)

- Symposium on Applied Aerodynamics and Design of Aerospace Vehicle (SAROD 2024)  
Thiruvananthapuram, India

### CFD Analysis of Various Angle Orientation of Winglet for Optimal Aircraft Performance (Not Published)

## FINAL YEAR PROJECT

### Integrated Control System For Active Fin-Controlled Rocket Stabilization and Guidance

- Designed and implemented an active fin control system using a PID controller, real-time IMU data, and mathematical modeling for optimization.
- Built and tested the rocket system, including custom PCB, servo-driven fins, and multiple propulsion systems, with successful validation through wind tunnel tests, and a flight test.

**PROJECTS****Project Trishul**

- Designed, developed, and launched two solid-propellant rockets to an apogee of 2.6 km and 1.8km.
- Validated performance through simulations, static thrust tests, and ground testing, with optimized aerodynamics, propulsion, and stability.

**SPLOOSH - An Amphibian Aircraft**

- Designed a 19-seater amphibian aircraft based on the DHC-6 Twin Otter; used XFLR5, OpenVSP, MATLAB, and X-Plane for design, analysis, and simulation.

**DBF 2024 - Rank: 21(Proposal), 38(Overall)**

- Participated in the 2024 AIAA Design/Build/Fly competition, designing and flying a RC electric aircraft for UAM missions—including delivery, medical transport, and urban taxi—while demonstrating rapid configuration changes during ground operations.

**Model RC Starship Replica**

- Developed a model starship which uses DC motor for propulsion and servo for fins-actuation.
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**SKILLS**

- |                   |                     |                           |                          |                        |
|-------------------|---------------------|---------------------------|--------------------------|------------------------|
| • <b>OpenFOAM</b> | • <b>Ansys</b>      | • <b>Google AppScript</b> | • <b>Simulink Basics</b> | • <b>Inkscape</b>      |
| • <b>MATLAB</b>   | • <b>CAD Design</b> | • <b>XFLR5</b>            | • <b>HTML</b>            | • <b>Python Basics</b> |
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**PARTICIPATIONS****Boeing AeroModelling - TechFest 2023, IIT Bombay**

- Designed, manufactured and flew a fixed-wing RC aircraft to maximize payload-to-weight ratio and perform accurate mid-air payload drops

**Design Hackathon**

- Designed a CAD model of an automated version of our campus gate.

**SpaceCon 2025**

- Presented our final year project on Integrated Control System For Active Fin-Controlled Rocket Stabilization and Guidance

**Glider Competition - MechTrix 2079**

- Designed, built and flew a small-scale glider.
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**ACTIVITIES**

- 7 days Ansys workshop
  - 7 days SolidWorks workshop
  - Organizing committee of Pulchowk Music Fest
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