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.

SKILLS

- **OpenFOAM**
- **Ansys**
- **Google AppScript**
- **Simulink Basics**
- **Inkscape**
- **MATLAB**
- **CAD Design**
- **XFLR5**
- **HTML**
- **Python Basics**

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.

ACTIVITIES

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