Ajay Sundaran S

Entry-Level Mechanical / Aerospace Design Engineer

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PROFESSIONAL SUMMARY

Aerospace Engineering graduate with hands-on experience in mechanical and electromechanical system design for aerospace applications. Currently working as a Design Engineer Intern, contributing to aircraft structural components and instrumentation systems, including exposure to certified aerospace hardware. Strong foundation in solid mechanics, material selection, CAD-based design, and engineering documentation. Actively building hands-on proficiency in Siemens NX for production-level modeling and drafting.

SKILLS

- **Core Skills:** Structural and mechanical design, load path identification, failure mode understanding, material selection, design for manufacturability and assembly (DFMA).
- **Manufacturing Knowledge:** Machined components, sheet metal parts, basic composite fabrication concepts; awareness of bolted joints and bonding methods.
- **GD&T & Tolerances:** Basic understanding of GD&T (datums, positional tolerancing) and tolerance stack-up concepts.
- **Tools:** CAD (Siemens NX – working knowledge / currently using, SolidWorks – advanced, Fusion 360 – intermediate), ANSYS Fluent, CATIA (basic exposure).
- **Programming Languages:** Python, MATLAB (basic), familiar with Java, C#, JavaScript.
- **Soft Skills:** Technical ownership, task planning, timeline tracking, cross-functional coordination, design documentation discipline.
- **Spoken Languages:** Tamil (Native), English (Professional working proficiency).
- **Engineering Exposure:** Basic exposure to ASME drawing standards, aerospace structural design practices, and certified hardware environments.

PROFESSIONAL EXPERIENCE

Design Engineer Intern - Xnomous Systems Pvt Ltd ,Bengaluru, Karnataka…….……**Sep 2025 – Present**

- Built a full aircraft instrumentation system simulation integrating multiple mechanical and electromechanical components, enabling testing and validation of 7+ avionics subsystems and improving fault-detection capability.
- Designed and analyzed aerospace structural components, supporting improved load distribution and structural reliability.
- Supported iterative design updates and engineering change implementation in coordination with senior engineers.
- Developed design concepts and prepared CAD models, assemblies, engineering drawings, and technical reports to support project execution and iterative design updates.

EDUCATION

Bachelor Of Technology in Aerospace Engineering……...……....2021-2025

VIT University, Bhopal **Overall CGPA: 8.16**

ACADEMIC PROJECTS

- **Vertical Take-off and Landing (VTOL) Aircraft Project (Team Leader & Inventor)**
  - Led conceptual and preliminary design of a 3.5 kg lift + cruise VTOL UAV, focusing on airframe configuration, CFRP material selection, weight reduction, and system-level integration.
  - Supported control-system integration and mechanical–actuation coordination for tilt-nacelle operation, improving system responsiveness and flight stability.
  - Attained a 35% total weight reduction and 20% efficiency gain through iterative structural analysis and material redesign.
- **Z-Band Project (Team Leader & Inventor)**
  - Directed the development of the Z-Band, a two-component IoT safety solution for school girls as a community service project.
  - **Engineered** a standalone system with automatic rope-binding detection, SOS, and dual-communication (live location and audio) via GSM/GPS, making it independent of a smartphone.
  - Amplified reliability in emergency tests by 50% and provided a superior, non-subscription-based solution for the community.

CERTIFICATIONS

- Fundamentals of Flight Mechanics — ISAE-SUPAERO (Credential ID: MF4QGB8S3LEK)
- Digitalisation in the Aerospace Industry — Technical University of Munich (Credential ID: C3MKX52JKDBK)
- Introduction to Self-Driving Cars — University of Toronto (Credential ID: RRLNC5NQW3KA)