

RUPAK BISWAKARMA

AIRCRAFT MAINTENANCE ENGINEER - Aircraft Design, 3D Modeling, Simulation & Analysis

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SKILLS

- **CAD & Design Tools:** SolidWorks, AutoCAD, 3D modeling, assembly design, motion simulation & drafting.
- **Aerospace Systems:** Aircraft systems design, propulsion analysis & layout, structural integration, avionics.
- **Simulation & Analysis:** MATLAB, NASA CEA, CFTurbo, performance analysis, system optimization.
- **Project Management Tools:** Microsoft Project, resource allocation, timeline tracking, project planning.
- **Technical Documentation:** Technical reporting, design interpretation, workflow documentation & compliance.

WORK EXPERIENCE

Car Mechanic

June 2023 - April 2024

Krishna Motor Parts and Repairs

- Diagnosed mechanical faults, restoring vehicle performance, reducing repeat repair frequency by 30%.
- Performed preventive inspections, extending vehicle lifespan, lowering unexpected breakdown incidents by 18%.
- Maintained engines, brakes, and suspensions for models, ensuring safety and reducing failures by 25%.

Event Coordinator - Startup Hackathon

September 2022 - January 2023

LPU University

- Coordinated in multi-club hackathons, improving overall event efficiency and collaboration by 20%.
- Directed innovation challenges, enabling teams to deliver solutions and boosting evaluation scores by 30%.
- Supervised registrations, timelines, and judging workflows, reducing operational errors across events by 25%.

OTHER EXPERIENCE

Event Coordinator - Space Camp India

January 2023

National Student Program

- Coordinated outreach and logistics for nationwide student participation, improving workshop execution by 28%.
- Led drone and RC aircraft sessions while supervising volunteers, achieving 95% on-time activity completion.

PROJECTS

Aircraft Simulator and Production Plan (Capstone)

Duration: 4 Months

- Engineered 6-DOF aircraft simulator, boosting accuracy by 35% while maintaining full milestone adherence.
- Structured production workflow, optimizing resources by 30% and improving calibration efficiency.

Aircraft Galley Design & Build

Duration: 3 Months

- Built full-scale aircraft galley mock-up, improving space utilization by 40% while minimizing alignment issues.
- Integrated mounting system, strengthening structural stability by 28% and improving installation precision.

Turbopump-Fed Rocket Engine (Capstone)

Duration: 5 Months

- Engineered propulsion system delivering 1700 kN thrust, achieving performance accuracy within 1% targets.
- Led system integration and thermal analysis, minimizing overheating risk by 25% and improving engine efficiency.

EDUCATION

Post Graduate in Applied Manufacturing Management - Aerospace Stream

May 2024 - December 2025

Conestoga College, Guelph, ON, Canada

Bachelor of Technology in Aerospace Engineering

August 2019 - July 2023

Lovely Professional University, Punjab, India

CERTIFICATIONS

- **CSWA (SOLIDWORKS CAD Design Associate)** - SolidWorks 2025
- **Aircraft Configuration Design** - Alison 2023
- **Introduction to Basic Vibration & Digitalisation in the Aerospace Industry**, Coursera 2022

PUBLICATIONS & PATENTS

- **Singhal, R., Toppo, C., Roy, P., Biswakarma, R., & Kalita, U.** (2022) Development Advances in Liquid Rocket Engines Turbopump: A Review. *International Conference on Future Technologies in Manufacturing, Automation, Design and Energy 2023*. – [Link](#)
- **Toppo, Clevin., Singhal, Rahul., Biswakarma, Rupak.** (2022) Electric Turbopump Fed Rocket Engine with Energy Generation System. IPR Patent No. 202211067024 A, Filed November 22, 2022. Published; Patent Pending.