

Sahil Mathur

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Education:

Bachelor of Technology in Aerospace Engineering

8.26 SGPA

NIMS University, Rajasthan

2020-2024

Main Subjects: Aerodynamics, Aerospace propulsion, Aerospace Structures, Avionics, Finite Element Method, Space Dynamics, Strength of Materials, Fluid mechanics, Thermodynamics.

Skills:

- **Designing and Analysis:**

Proficient in designing and analyzing of different parts of an aircraft like wings and fuselage and as well as specialized in designing of turbojet engines and nozzles of rocket such as de Laval nozzle (CD NOZZLE) in Catia V5. Computational Fluid Dynamics (CFD) and Finite Element Method (FEA) analysis of CD nozzle and Re-entry Space Craft in Ansys Fluent 2022 R1.

- **Electronics:**

Familiarity with electronic circuit design, components, and PCB layout, Arduino UNO, ESP modules (ESP 8266 NodeMcu, ESP 32), Raspberry pi, Sim808 for Cellular Communication, Different types of sensors (temperature sensors, pressure sensors, GPS sensors,).

- **Programming:**

Skilled in programming languages such as Python, MATLAB used for data analysis, system simulation, and C/C++ is used in performing complex tasks on the different development boards and single core CPUs'. Currently learning Linux operating system (Ubuntu, Kali Linux).

- **Laboratory Equipment:**

Experienced in utilizing laboratory equipment, including Wind Tunnel, Venturi meter, and Pitot Tube.

- **Transferable Skills:**

Problem-solving, Analyzing root causes, Team Collaboration, Effective Communication with technical and non-technical audiences, Critical Thinking, Research Methodologies, Adaptability, and Continuous Learning Attitude

Professional Experience:

Design and Analysis Intern

July 2023 – Aug 2023

Brahmastra Aerospace and Defense Pvt. Ltd., Bengaluru

- Design and blades, turbojet engines, missiles, etc. and CFD, FEA analysis of hypersonic missiles and CD nozzle.
- Design of Aircraft wings, Turbojet Engines with high precision and details.

Propulsion Intern

Sept 2022 - Jan 2023

Dream Aerospace Pvt. Ltd., Chennai

- Design and analysis of different types of fuel injectors of a liquid propulsion rocket.
 - Analysis of combustion chamber with the uses of green propellant.
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Projects:

• **Satellite Tracking system using NodeMcu/ ESP 32**

- Making the circuit to connect the NodeMcu/ESP32 with the stepper motors and motor drivers.
- Using Arduino IDE software to write the code and compile in it.
- Writing the code in C/C++.

• **HyperSonic Aerofoil Design and Anslysis**

- Taking different types of NACA Aero foil and making the wing of an aircraft in Catia V5 Software.
- Analyzing that wing in using coupled analysis of Ansys Fluent and Ansys Mechanical.
- After getting the values, analysis the velocity and temperature values in MATLAB for making a graph between them.

- **Re-entry Space Craft Design and Analysis**
 - Designing the atmospheric re-entry space craft in Catia V5 Software.
 - Analysing the design in Ansys fluent solves under real conditions at Mach 26.
 - Finding the values of Temperature, Pressure when using Titanium alloys and aluminium alloys.
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Volunteer Experience:

Member of Space Exploration Project Group

October 2022 - Present

Space Generation Advisory Council (SGAC)

- SEPG actively participates in shaping the GER, a document outlining future pathways for international space exploration, by incorporating the perspectives and aspirations of young people.
- SEPG regularly hosts conferences, webinars, and hackathons on various space exploration topics, fostering knowledge sharing, networking, and the development of innovative ideas.

Citizen Scientist

October 2022 - December 2022

International Asteroid Search Campaign, NASA

- Led a team of four members to learn, work, and, get effective results from data analysis of FITS images in Astrometrica Software
 - Prepared MPC reports to be submitted, and got two preliminary detections and one provisional detection
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MOOCs/ Workshop/ Conferences Attended:

- Indian Defspace Symposium 2023, April 2023
 - Ansys Workshop, May 2022
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Languages:

- English
- French
- Hindi
- Russian