

SAUBHAGYA SHARMA, MSc

Leeds, GB | +447769487099 | saubhagyahr01@gmail.com | <https://linkedin.com/in/saubhagya-sharma05> | www.saubhagya-sharma.com

PROFESSIONAL SUMMARY

A highly motivated engineer with a master's in automotive engineering and a strong focus on mechanical design and CAD modelling. Skilled in developing standards-compliant, manufacturable components using both traditional and code-driven CAD tools. Created a dedicated **online design portfolio** to showcase advanced parametric CAD projects using SolidWorks and CadQuery (Python), with emphasis on DFM, tolerance control, simulation validation, and clear engineering communication.

EDUCATION

University of Leeds, Leeds, UK - MSc in Automotive Engineering

Graduated December 2024

Manipal Institute of Technology, Manipal, India – B. Tech in Aeronautical Engineering

Graduated July 2022

CORE SKILLS

- Finite Element Analysis
- Parametric CAD Modelling
- CFD Analysis
- Design for Manufacturing (DFM)
- CAD Automation
- Standards Based Engineering (ISO)
- Design Documentation & Presentation

SOFTWARE SKILLS

Abaqus | SolidWorks | CATIA | Ansys Fluent | CadQuery | MATLAB | X-Foil | Microsoft Excel | Jira

KEY ACHIEVEMENTS

Parametric Mechanical Design Portfolio

(February 2024 – Present)

- Built and published an **interactive web-based portfolio** to present mechanical **CAD projects, featuring ISO-compliant parts** and simulation-backed designs.
- Developed and documented CAD models using **SolidWorks** and CadQuery (**Python**), with an emphasis on **design for manufacturing (DFM)**, tolerance analysis, and modular geometry generation.
- Projects modelled from scratch with scripting and exported for CNC/3D-print readiness.

Adaptive Morphing Spoilers – University of Leeds, Leeds

(December 2023 – September 2024)

- Conducted detailed FEA on morphing aerodynamic systems for vehicle optimization.
- Utilized **Abaqus** for simulations and **CATIA/SolidWorks** for 3D modelling.
- Identified stress concentrations and critical failure points; optimized design to improve load tolerance by **18%** under dynamic conditions.
- Contributed to vehicle stability and drag reduction, supporting product development for high-performance applications.

Research Assistant – DRDO, India

(January 2022 – June 2022)

- Optimized airfoil geometry and conducted CFD simulations using **Ansys Fluent** for UAV applications.
- Enhanced lift efficiency by **15%** and improved system integration metrics by **20%**, contributing to a successful defence-grade aerostructure design.

PROJECTS

Single Gear Transmission and Battery Module Integration for Formula E Vehicle

Jan 2024 – Mar 2024

- Developed a high-efficiency single gear transmission system and conceptual battery module integration for an electric race car.
- Designed shaft and gear system using **SolidWorks**, performed **FEA with Abaqus**, and simulated thermal loading of battery pack using **MATLAB and Ansys Fluent**.
- Enhanced component fatigue life by **12%**, increased structural integrity by **10%**, and reduced thermal hotspots in battery module by **18%** using optimized cooling strategies.

Connected Autonomous Vehicle (CAV) Pod Design – University of Leeds

Oct 2023 – Dec 2023

- Engineered a lightweight, energy-efficient autonomous vehicle pod with integrated safety and sustainability features.
- Applied **eco-design principles**, used **CATIA** for body modelling, and evaluated battery energy consumption patterns under simulated drive cycles in **MATLAB/Simulink**.
- Achieved **20% energy efficiency gain**, **15% cost reduction**, and **10% lower emissions** by integrating sustainable materials and optimizing power management.

Investigation of Active Flow Control Around NACA84-M Aerofoil

Oct 2023 – Dec 2023

- Investigated performance improvements through active flow control for future EV aerodynamic systems.
- Conducted **CFD simulations in Ansys Fluent** at various angles of attack and validated against benchmark data.
- Delivered **14% aerodynamic efficiency increase** in optimized flow conditions applicable to EV body panel design.

EXPERIENCE

Structures Engineer (Student Role)

July 2018 – July 2020

- Collaborated on multiple aerostructure design projects emphasizing strength, weight, and manufacturability.
- Developed proficiency in **material selection**, **structural FEA**, and **CAD tools** for real-world applications.
- Contributed to a **25% efficiency improvement** across 4 completed structural projects.

LEADERSHIP & MEMBERSHIPS

Election Candidate – International Officer, Leeds University Union

- Led a campaign with strategic outreach, increasing student engagement by **35%**.

Member – Rotaract Club of Manipal

- Coordinated and led multiple technical and leadership events, collaborating with diverse teams.

HOBBIES

Building RC Vehicles | Simulation Racing | Cricket | Football | Chess | Travel