

# MILJOT SINGH GAMBHIR

## Graduate Mechanical Engineer

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### Profile

Mechanical Engineering graduate with expertise in product design, analysis, and manufacturing, specialising in FEA, CFD, and 3D printing. Proven ability to improve product efficiency by leveraging CAD tools like SolidWorks and AutoCAD to develop innovative, reliable engineering solutions that meet ISO standards.

### Education

#### **MSc, Advanced Mechanical Engineering**

##### **University of Sheffield, United Kingdom (2023-present)**

- **Focus:** FEA, CFD, 3D Printing, Carbon-Capturing system, and Human Ergonomics.
- **Dissertation:** Designed a more efficient horizontal wind turbine by applying advanced CFD simulations, achieving a 15% increase in energy capture.

#### **Bachelor of Technology, Mechanical Engineering with specialisation in Automobile Engineering Dehradun Institute of Technology, India (2018-2022)**

- Acquired a strong foundation in automotive engineering, with a focus on design, analysis, and the application of engineering principles. Also gained expertise in automotive system integration, mechanical analysis, and CAD.
- **Key Projects:** Formula Student, Automotive System Integration.

### Experience

#### **Clarivate Analytics**

##### **Analytics Consultant, India**

**Jan'2022-Sep'2023**

- Enhanced patent data accuracy for 1,500+ documents, leading to more informed client decisions and a 15% boost in processing efficiency.
- Collaborated with cross-functional teams to streamline patent analysis processes, reducing operational bottlenecks and improving turnaround times by 15%.
- Designed and implemented automated workflows in Excel, reducing manual effort by 30% and significantly improving process efficiency.
- Delivered data-driven insights that optimised client patent analysis, improving output precision and helping clients navigate complex IP challenges more effectively.

#### **3Ding**

##### **Mechanical Design Engineer Trainee, India**

**Mar'2021-Sep'2021**

- Designed and optimised 3D models for clients using additive manufacturing techniques, resulting in a 20% reduction in material usage without compromising product integrity.
- Led the quality assessment of 3D-printed prototypes, ensuring high precision and adherence to client specifications, which improved client satisfaction rates by 15%.
- Streamlined design processes and integrated FDM and SLS 3D printing technologies, reducing project lead times by 25%.
- Collaborated with cross-functional teams to implement innovative design solutions, enhancing overall product performance and operational efficiency.

#### **Ather Energy**

##### **Robotic Assembly Design Engineer, India**

**May 2020-Nov'2020**

- Increased production efficiency by 18% through robotic assembly system design.
- Led process optimisation efforts, improving robotic workflows and reducing assembly cycle time by 20%.
- Collaborated with cross-functional teams to refine design and integration processes, enhancing system reliability and reducing production errors by 15%.
- Implemented data-driven improvements, streamlining robotic operations and boosting overall system performance across production lines.

## **Projects**

### **Optimising Horizontal Wind Turbine Design Concepts:**

- Engineered wind turbine blades using SolidWorks and ANSYS to enhance aerodynamic efficiency, achieving a 10% increase in power output. Utilised CFD techniques to simulate airflow and optimise energy capture, ensuring compliance with ISO standards and industry regulations. Collaborated with experts to validate the design, driving practical implementation.

### **Prospects of Utilizing Carbon Fiber in the United Kingdom Public Transportation:**

- Developed lightweight, durable carbon fibre components for public transport systems, reducing overall weight while maintaining structural integrity. Applied FEA in ANSYS to assess stress and strain, improving safety and performance. Delivered comprehensive technical documentation, supporting the adoption of sustainable materials in transportation.

### **Static Structural Analysis of Elastomeric Engine Mount: A Comprehensive Study on Deformation Evolution Due to Ageing:**

- Conducted FEA to analyse deformation and stress evolution in rubber engine mounts due to ageing, leading to enhanced durability. Combined CAD modelling with theoretical analysis to improve understanding of material behaviour. Proposed design strategies that extended product lifespan, enhancing overall system performance.

## **Volunteering**

### **DIT Motoracing, Crew Member**

As a crew member of DIT Motoracing, I contributed to constructing a Formula-1-style car for the Formula Bharat competition, where we competed against over 100 collegiate teams. In the Braking Department, I collaborated with a dedicated team to refine the braking system, enhancing both track performance and functionality. This experience gave me valuable insights into high-performance vehicle design and competition dynamics, further igniting my passion for innovation in automotive engineering.

## **SKILLS & INTERESTS**

**Languages:** English, German, Punjabi, Hindi

### **Technical skills:**

- **CAD Software:** AutoCAD, SolidWorks, Fusion 360, CATIA, Siemens NX, MatLab and MathWorks.
- **Analysis:** FEA (Finite Element Analysis), Stress Analysis, Thermal Analysis, GD&T
- **Other Software:** Microsoft Word, Microsoft Excel, MS PowerPoint
- **Manufacturing Processes:** Lean Manufacturing, Additive Manufacturing
- **Design Methodologies:** DFM (Design for Manufacturing), DFA (Design for Assembly)

**Soft skills:** Attention to detail, problem-solving, communication, time management, team collaboration, adaptability, creativity, critical thinking, customer focus, Product Documentation, organisation, patience, initiative, flexibility, presentation skills, multitasking, receptiveness to feedback, collaboration, decision-making, work ethic, and conflict resolution.

**Certifications:** AutoCAD, SolidWorks, Autodesk Fusion, Reverse engineering for 3D printing and Six Sigma Belt.