MILJOT SINGH GAMBHIR

Mechanical Engineer

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Profile

Mechanical Design Engineer with a strong foundation in advanced mechanical designs, leveraging 3 years of experience to drive innovation and enhance product efficiency. Proficient in Fusion 360 and SolidWorks, with a keen focus on innovation strategy and technical analysis to streamline processes and improve product reliability. Passionate about integrating cutting-edge solutions in engineering projects to foster growth and efficiency.

Education

MSc, Advanced Mechanical Engineering
University of Sheffield, United Kingdom (2023-2024)

- Developed in-depth knowledge of mechanical systems, 3D printing, Carbon-Capturing, Human Ergonomics and FEA.
- Applied finite element analysis (FEA) and computational fluid dynamics (CFD) to optimize design performance.
- Dissertation on optimising horizontal wind turbine design, applying simulation techniques to improve efficiency.

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.
- Contributed to engineering projects in the Formula Student competition, refining project management and teamwork skills.

Experience

Clarivate Analytics - Analytics Consultant, India — Jan'2022-Sep'2023

- Provided strategic insights that significantly enhanced client decision-making processes and drove measurable improvements in project outcomes.
- Worked closely with cross-functional teams to streamline analytics processes, fostering a culture of data-driven decision-making across departments.
- Implemented data-driven strategies that led to substantial enhancements in client performance metrics, driving business growth and efficiency.
- Developed innovative analytical models that transformed complex data into actionable insights, leading to improved business strategies.
- Led data initiatives that optimized resource allocation, achieving measurable improvements in project delivery timelines and client satisfaction.
- Advised on data governance policies, ensuring compliance and enhancing data integrity across multiple departments, driving operational excellence.

3Ding – Mechanical Design Engineer Trainee, India — Mar'2021-Sep'2021

- Developed advanced mechanical designs, enhancing product efficiency and reliability through innovative engineering solutions.
- Streamlined design processes, leading to measurable improvements in project delivery time and quality standards.
- Worked closely with cross-functional teams to ensure seamless integration of mechanical components, fostering a collaborative environment.
- Conducted meticulous design reviews, ensuring precision and adherence to industry standards, significantly reducing project errors.
- Provided technical support and mentorship to junior engineers, promoting a culture of continuous learning and development.
- Pioneered novel mechanical solutions, driving product advancements and fostering a culture of inventive engineering.

Ather Energy – Robotic Assembly Design Engineer, India — May 2020-Nov'2020

- Engineered robotic assembly designs at Ather Energy, enhancing efficiency and precision, showcasing strong analytical and problem-solving skills.
- Optimized robotic systems, leading to improved production workflows and demonstrating a commitment to continuous improvement and attention to detail.
- Worked closely with cross-functional teams to refine assembly processes, fostering teamwork and effective communication at Ather Energy.
- Passionate about robotics, actively sought innovative solutions to complex design challenges, showcasing adaptability and eagerness to learn.
- Focused on precision in robotic assembly design, contributing to high-quality outputs and maintaining rigorous standards at Ather Energy.
- Implemented data-driven solutions to streamline robotic assembly operations, demonstrating strong analytical skills and enhancing system reliability.

Projects

Light Weight multifunction Hand Trolley:

- Utilised SolidWorks and AutoCAD to create 3D models and improve manufacturability through DFM principles, reducing overall weight by 15% while maintaining structural integrity.
- Performed structural analysis and simulation testing to verify the load capacity and durability of the trolley design.
- Utilized advanced engineering design and manufacturing techniques to develop a pioneering solution.
- Managed the design project from concept to prototype and full production, coordinating with manufacturers to ensure production aligned with quality standards.
- Met the urgent needs of older people by utilizing various skills such as material selection, BOM creation using SolidWorks for product development, and structural analysis.

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

- Designed carbon fibre components using SolidWorks, optimising for lightweight and durability, while conducting FEA in ANSYS to simulate stress and strain under operational loads.
- Worked with a diverse team to investigate the potential of utilizing the strength and lightweight nature of carbon fibre.
- Researched the integration of carbon fibre into public transport systems, assessing manufacturing processes and ensuring compliance with ISO standards.
- Produced detailed technical documentation and reports based on simulations and material studies, supporting the use of carbon fibre for sustainable transportation solutions.

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

- Performed in-depth FEA analysis on rubber engine mounts to examine stress, strain, and deformation patterns caused by ageing.
- Showed expert skills in CAD modelling and FEA methods, effectively simulating material dynamics.
- Interpreted FEA findings to generate practical strategies for enhancing design durability and lifespan.
- Merging theoretical knowledge with hands-on experimentation to improve comprehension of structural behaviour.
- Assisted in a thorough investigation to guarantee engine mounts perform at their best and last long.

Optimising Horizontal Wind Turbine Design Concepts:

- Designed and optimised wind turbine blades using SolidWorks and conducted FEA simulations in ANSYS to evaluate aerodynamic performance and improve power efficiency by 10%.
- Applied computational fluid dynamics (CFD) techniques to simulate airflow and energy capture, enhancing design accuracy.
- Collaborated with industry experts to validate design modifications and ensured compliance with ISO standards.
- Working closely with academic mentors and industry specialists to guarantee the practicality of various simulation techniques.
- Solving issues to maximize wind turbine effectiveness and efficiency with critical thinking and problem-solving.

Volunteering

DIT Motoracing, Crew Member

- Contributed to constructing a Formula-1-style car in the DIT Motor Racing Team's Braking Department, participating in the Formula Bharat competition against over 100 collegiate teams.
- Collaborated with a dedicated team to refine the braking system, ensuring optimal track performance and functionality.
- Gained valuable insight into high-performance vehicle design, and competition dynamics, fostering a passion for innovation in automotive engineering.

SKILLS & INTERESTS

Languages: English, German, Punjabi, Hindi

Technical skills:

- **CAD Software:** AutoCAD, SolidWorks, Fusion 360, CATIA
- **Analysis:** FEA (Finite Element Analysis), Stress Analysis, Thermal Analysis
- **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.