Mohit Chaudhary

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EDUCATION

Vellore Institute of Technology, Vellore 2021 – 2025
B. Tech – Mechanical with specialization in automobile engineering

PROFESSIONAL EXPERIENCE

Bharat Fritz Werner, Bangalore Aug 2025 – Present
Graduate Engineer Trainee – R&D dept

- Assisted modeling of VMC structures components and assemblies using **SolidWorks**, structures include milling head, ram, column, base and table.
- Reported **10%** decrease in material weights and **12%** increase in strength in few models during design enhancements.
- Performed structural analysis of various VMC structures using **COMSOL Multiphysics** to study stress and deformations.
- Prepared 2D engineering drawings with dimensions, drafting standards, and basic **GD&T** practices for manufacturing reference.
- Assisted co-workers in using **AI** tools for quick and fast data related tasks and also finding solutions for SolidWorks errors and fixes.
- Analyzed and reduced cost of machine components by **5%** along with BOM handling on SAP systems.

Maruti Suzuki India Pvt Limited, Gurugram Sept 2023 – Oct 2023
Technical Intern (Production Quality Control)

- Executed end-of-line quality inspection on the Jimny 2023 assembly line, verifying critical weld integrity, paint finish, and panel gap/flushness tolerances.
- Identified and reported panel **gap and flushness deviations** on Maruti EECO lines to ensure structural and aerodynamic specifications.
- Conducted vehicle rain-chamber testing protocols to identify, log, and isolate root causes for water logging defects.
- Understood **production workflow and shop-floor operations**, including the car's manufacturing sequence.

SKILLS

Design & CAD Tools - SolidWorks (3D Modeling, 2D drawings & Assembly), ANSYS Structural, CATIA V5, Fusion 360, GD&T

Quality & Manufacturing - Manufacturing Processes, Quality Inspection Basics, Root Cause Analysis, PLM, Assembly & Fitting

CAE & Software Tools - MS Excel, PowerPoint, SAP (BOM Handling), ANSYS Structural, COMSOL Multiphysics

PROJECTS

Real-Time Monitoring & Predictive Maintenance of Gear Systems Apr 2025

- Developed a **cost-effective IoT-based condition monitoring system** integrating an **ESP32** camera, **SW-420** vibration sensors, and **Arduino** microcontrollers
- Developed custom CAD models for the base, gear train, and structural supports in SolidWorks, rapidly prototyping functional components through lab-scale 3D printing.
- Evaluated vibration graphs and optical data from baseline and defective 3D-printed gears, achieving **80% fault prediction accuracy**.
- Accelerated early defect detection cycles by **15%** compared to conventional periodic maintenance schedules.
- Presented research findings at the **SMAMIA 2025** international conference.

Automotive crashbox analysis (3 designs) Nov 2024

- Designed and benchmarked **3+** energy-absorbing crashbox configurations against standard honeycomb structures using SolidWorks and Fusion 360.
- Achieved a **20% improvement in energy absorption efficiency** while reducing overall structural weight by **30%**.
- Concluded the FEA simulations, achieving the desired crashworthiness outcomes for all three crashbox designs in a total computational time of 30 minutes.

CO-CURRICULAR ACTIVITIES & FORMULA STUDENT

Team Ojas Racing (Formula Student Electric), VIT Vellore
Chassis Design Engineer Feb 2022 – Dec 2024

- Designed a tubular spaceframe chassis in SolidWorks along with a compliant with Formula Student safety regulations, achieving a torsional rigidity of **2,200 Nm/deg**.
- Performed **structural and modal simulations** (FEA) in ANSYS to optimize design and maintain structural strength.
- **Fabricated chassis** structure hands-on through tube notching, metal cutting, and MIG welding.
- Represented India at **Formula Student Germany (Hockenheimring,Baden-Württemberg, Germany)**, was responsible for all the design and simulation reports of our chassis during the technical inspection and the team ranked 26th in Business Plan Presentation.

Society of Automotive Engineers, VIT Vellore
Senior Core member Mar 2022 – Jan 2024

- Facilitated interactive webinars on electric mobility architectures and battery technologies for an audience of 100+ participants.
- Designed 5+digital media content for promotional and educational purposes for the club's social media platforms.
- Supported audio and track preparation for the Indian Drone Racing League at GraVITas fest.

CERTIFICATES

- **SOLIDWORKS ASSOCIATE | LINK**
- **SOLIDWORKS PROFESSIONAL | LINK**
- **MARUTI SUZUKI INDIA LIMITED INTERNSHIP CERTIFICATE| LINK**
- **FORMULA STUDENT GERMANY CERTIFICATE | LINK**