

Maruthi Prasad Bantu

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Summary

Dynamic and results-driven Automotive Engineering graduate with expertise in Finite Element Analysis (FEA), CAD design, and NVH Acoustic Analysis. Proficient in using MATLAB, Simulink, ANSYS, SolidWorks, Creo, DFMEA, and GT-Suite for complex engineering projects. Demonstrated ability to improve performance metrics and lead innovative projects in automotive engineering. Eager to apply academic knowledge and project experience in a challenging entry-level engineering role.

Key Skills

Technical Skills:

- Finite Element Analysis (FEA), ANSYS, GT-Suite
- Computer-Aided Design (CAD), Battery Management System (BMS)
- NVH Acoustic, Crash Impact, Thermal Analysis
- MATLAB & Simulink
- ANSYS, SolidWorks, Creo
- DFMEA, GD&T
- HTML, CSS, JavaScript, Python, SQL(Basics)

Soft Skills:

- Project Management
 - Problem-Solving
 - Team Collaboration
 - Analytical Thinking
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Professional Experience

CAE Engineer (Online Intern)

Simulations Lab India

May 2022 - July 2022

- Designed an aerofoil wing and simulated its performance in a virtual wind tunnel using ANSYS Fluent, achieving a 20% improvement in aerodynamic performance.
- Collaborated with a team of 15 to validate performance enhancements, ensuring accuracy and efficiency.

PLM Intern

Tata Technologies

February 2019 - March 2019

- Trained in PTC Windchill and 3D Experience (Enovia), streamlining Bill of Materials (BOM) and lifecycle management processes, improving efficiency by 15%.
 - Gained comprehensive knowledge in automotive lifecycle management from concept to disposal.
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Projects

Composite Bone Fracture Fixation Plate

- Designed 3D models of fracture bone fixation plates and screws in SolidWorks, reducing plate thickness by 4mm, making them lighter and more comfortable for patients.
- Reduced predicted bone plate failure rates by 13% through FEA, enhancing bone healing.
- Conducted stress-strain distribution analysis under various loading conditions using ANSYS (up to 10 m/s), representing different impact cases in real-world situations.

AI Driven X-Ray Baggage Scanner

- Developed an AI-based system to automate the detection of harmful items in luggage, increasing efficiency by 40%.
- Collected 5 GB of data, cleaned, and labelled thousands of X-ray images, including multiple categories of harmful items (gun, knife, blade).
- Implemented YOLO and Faster R-CNN algorithms, achieving 92.85% accuracy using a comprehensive dataset of labelled X-ray images.

Design and Fabrication of Formula 3 Racing Car

- Led a team of four in designing and optimizing the powertrain system for an SAE Supra car.
- Used a custom-mounted 2015 Honda CBR 150R bike engine, designed fuel system and coolant system using Creo, and performed thermal analysis using ANSYS.
- Achieved a maximum speed of 105 km/h and improved power efficiency by 15% through real-world testing.

Education

Masters in Automotive Engineering with Electric Vehicles

Oxford Brookes University

September 2022 - September 2023

- **Course works:** BMS, Electric Vehicle Design, Advanced Powertrains, Vehicle Dynamics, Crash Impact, NVH (Noise, Vibration, and Harness).

Bachelors in Mechanical Engineering

MLR Institute of Technology, Hyderabad

August 2017 - May 2021

- Honors: Graduated with First Class.

Achievements

- **AI Voice Assistant:** Developed a personal AI voice assistant using Python.
- **Portfolio Website:** Created a personal portfolio website and introduced an AI chatbot using HTML, CSS, and JavaScript.

Certifications

- MATLAB on-ramp, MATLAB Academy (MathWorks) – 2024
- Simulink on-ramp, MATLAB Academy (MathWorks) – 2024
- CFD through Centrifugal Pump, Coursera – 2024
- CFM - Airflow around a spoiler, Coursera – 2024
- SolidWorks, CADD Craft Solutions – 2022