Pratik Prakash Chhattise
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EDUCATION

North Carolina State University, **MS, Mechanical Engineering**, August 2023 – May 2025
Savitribai Phule Pune University, **BE, Mechanical Engineering**, August 2018 – July 2022

PROFESSIONAL SUMMARY

A motivated and dedicated individual seeking opportunities to contribute to company growth while enhancing my skillset and gaining valuable experience. Eager to leverage strong interpersonal skills and technical knowledge to drive success and continuous improvement.

SOFTWARE SKILLS

AutoCAD | Autodesk Inventor | Ansys | Fusion 360 | Solidworks | Catia | UG-NX | MATLAB

PROJECTS

Crash Simulation and Stiffness Optimization of EV Battery Packs for Enhanced Safety

- Modeled and simulated crash scenarios using FEA (Finite Element Analysis) to assess the impact on battery pack structure.
- Analyzed stress distribution and deformation patterns to identify areas for structural improvement.
- Optimized the design of the battery casing by evaluating different materials and configurations for increased stiffness.
- Conducted prototype validation using a Universal Testing Machine (UTM) to ensure simulation accuracy and real-world reliability.
- Achieved significant reduction in stresses acting on the battery, improving overall crash safety performance.
- Developed expertise in crash analysis, EV battery systems, and gained proficiency in ANSYS and Fusion 360, while enhancing problem-solving skills.

Research and Analysis of Asymmetric Stretching of Symmetrically Loaded Elastic Sheets

- Conducted an in-depth literature review on the mechanical behavior of elastic sheets under symmetric loading conditions.
- Analyzed factors such as material inhomogeneity, boundary conditions, and geometrical nonlinearity contributing to asymmetric deformation.
- Explored real-world applications, including thin-film materials, soft biological tissues, and flexible electronics.

Completed coursework focused on product design.

- Mapping System Design Variables, System Attributes, and Demand – Analyzed the relationship between design variables and consumer requirements to optimize product functionality.
- Analysis Using Discrete Choice Models and Reflections on Product Development – Applied discrete choice models to evaluate consumer preferences and provided insights for improving product development strategies.

COURSES

GD&T and Tolerance Stack-up Analysis

- Gained a comprehensive understanding of Geometric Dimensioning & Tolerancing (GD&T) symbols and their application in design.
- Learned how tolerance variations affect part fit, function, and manufacturability.

EV Design using MATLAB Simulink

- Studied key components of electric vehicles, including motors, Battery Management Systems (BMS), and vehicle modeling.
- Used MATLAB Simulink for simulating and analyzing the performance of EV systems.

Workshop on Electric Vehicles

- Acquired foundational knowledge of electric vehicle mechanisms, components, and operational basics.
- Explored EV technologies, covering motors, batteries, and drivetrain systems.