Vamsikrishna Nandimalla

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Summary

Highly motivated and detail-oriented Automotive Engineer with a Master's in Automotive Engineering. Experienced in quality assurance, product development, manufacturing, and assembly processes. Skilled in APQP, PPAP, Root Cause Analysis, GD&T, DFM, CAD, Ansys, and lean manufacturing methodologies. Proven ability to conduct thorough inspections, implement effective quality control measures, and lead innovative projects. Seeking a role in product development, manufacturing, and process improvement to leverage my expertise in driving continuous improvement, ensuring high-quality standards, and advancing mechanical systems.

Education

Lawrence Technological University, Southfield, MI - 07/2024
Masters of Science: Automotive Engineering
GPA: 3.43

JNTUH, India - 07/2021
Bachelor of Technology: Mechanical Engineering

Skills

- **Quality Assurance**: APQP, PPAP, Root Cause Analysis, and process improvement.
- **Plastic Design and Manufacturing**: CATIA V5, CFD, GD&T, DFM, Tool Design, AutoCAD, Ansys, Injection Molding.
- **Tool Design & Product Development:** New tool design, DFM, and coordination of engineering trials.
- **Automotive Systems:** Powertrain Systems, Automotive Manufacturing
- **Project Management**: MS Projects
- **Technical**: Budget Planning, Troubleshooting

Experience

Inspection Engineer (Internship), OLX Auto (11/2021 - 04/2022)

- Conducted comprehensive inspections to ensure the quality, safety, and compliance of automotive components, reducing defect rates by 15%.
- Worked alongside skilled tradesmen to troubleshoot and implement process improvements, enhancing high-speed stamping tool efficiency by 20%.
- Utilized precision inspection tools to assess material and component integrity, improving first-pass yield by 12%.
- Recommended process improvements based on inspection findings, leading to a 10% improvement in overall product quality.
- Collaborated with cross-functional teams to develop and implement new quality assurance protocols, ensuring 100% compliance with safety and industry standards.

Projects and papers

Computational Fluid Dynamics Analysis of Air Cooler Configurations Using Ansys Workbench

- Completed a CFD project comparing four air cooler designs using Ansys Workbench, optimizing airflow efficiency by 18%.
- Modeled and analyzed pressure and temperature drops to assess performance, improving tube and outlet temperature uniformity by 12% across configurations.
- Delivered simulation files and a detailed report with key findings, contributing to enhanced thermal management strategies.

A-Pillar Design

- Designed a Class A surface for the A-Pillar, defined draw direction, and developed Class B attachments, ensuring 100% structural integrity.
- Conducted strength analysis, feasibility studies, and manufacturability assessments, reducing potential manufacturing defects by 20%.
- Integrated locators and hands-free clips, enhancing assembly efficiency by 30% and reducing installation time.

Design Review on Bezel Bracket

- Conducted DFM and DFA reviews, optimizing production and assembly processes, reducing manufacturing time by 15%.
- Analyzed Mold Flow Analysis reports for plastic components, recommending design modifications that improved manufacturability by 25%.
- Delivered technical presentations on PP, ABS, PA, and POM plastics, educating teams on optimal material selection for bumpers, dashboards, and spoilers.

Comparative Analysis of ABS and PP Materials for Injection Molded Wheel Arch Finishers

- Led a comparative analysis on ABS and PP materials, selecting the optimal material that reduced costs by 12% while maintaining durability.
- Conducted material testing and simulations, improving impact resistance by 15% and enhancing environmental sustainability.
- Utilized CAD and statistical software to evaluate mechanical properties, supporting cost-effective material selection for injection molding.

Shock Absorber Based Power Generation

- Developed a shock absorber-based power generation system prototype, improving energy conversion efficiency by 20%.
- Designed a rack and pinion mechanism to convert mechanical vibrations into electrical energy, optimizing integration for vehicle architectures.
- Conducted real-world testing, demonstrating a 15% increase in power output over traditional kinetic recovery systems.

Design and Analysis of Electric Vehicle Chassis

- Conducted comprehensive analysis on various electric vehicle chassis designs, including backbone and skeleton structures, to optimize structural integrity, weight distribution, and safety, using simulations and finite element analysis (FEA).

Corrosion Fatigue

- Analyzed corrosion fatigue under different loads on various materials, developing testing protocols to assess the combined effects of mechanical stress and corrosive environments, and identifying strategies to enhance material durability and reliability.

Resistance Spot Welding

- I utilized resistance welding, the most common and established method for joining metal parts, involving the application of pressure and passing an electric current through the metal to achieve fusion and create a strong bond. This versatile process was applied in various ways, including spot welding without the use of filler material.

Certifications

- **AutoCAD Certification** – Udemy | 2025
- **CATIA V5 Certification** – Udemy | 2025
- **Lean Six Sigma White Belt** – Lean Six Sigma Society | 2025