



Abhay Kumar

Sr. Mechanical Design Engineer

Proven career in conceiving & implementing effective ideas / strategies that can add value to organization through rich experience & innovation excellence in Design Engineering in Automobile Industry.

Profile Summary

- **6.11 years** of experience on mechanical product design development & structural analysis (**CAD/CAE**).
- Awarded the best project (Brake, Suspension, Steering & ECU Development) in the annual year of 2022 for contribution and excellent performance.
- Won R&D conference award for excellent paper & thesis (Design Optimization Topology) in the annual year of 2022. Product models & drawings using GD&T methodology, plastic, sheet-metal and casting part design, Design Verification, Product Validation.
- Establish design concepts and develop performance specifications for both plastic and metal parts including finished assemblies utilizing CATIA, NX-CAD, Solidworks & Pro-E / Creo.
- Billing of Material (BOM), Geometric Dimension and Tolerance (GD&T).
- ASME Y14.5 Standard & General Tolerance ISO 2768
- Utilize engineering disciplines including DFMEA and CAE to develop robust design solutions.
- Design rules, technological and manufacturing processes of sheet metal, plastic & casting parts.
- Engineering calculations and knowledge of programs supporting FEM calculations utilizing Ansys Mechanical performing the Structural analysis (Modal Analysis, Random Vibration, Fracture Failure, Topology Analysis, Thermal-Stress and Fatigue Analysis).
- Analysis of customer requirements and translating them into the technical specification of the product.
- Active participation in product development (from the prototyping phase to serial production).
- Optimization of the construction improving the quality of the products offered and reducing costs.
- Management of technical documentation, internal clients (testing department, production) and external clients (supplier, client) and with other R&D departments in the world, e.g., Korea, Germany & India.

Key Impact Areas

CAD/CAE, CATIA, NX-CAD, CRE-O, SOLIDWORKS.

ANSYS WORKBENCH, NASTRAN, HYPERWORKS

Sheet Metal, Plastic, & Casting Product Design.

Mechanical Design, Drafting (GD&T) & BOM.

DFMEA, DFM, Tolerance Stack-Up Analysis

Liner & Non-Liner Analysis

(Modal Analysis, Random Vibration, Fracture Failure, Topology Analysis, Thermal-Stress and Fatigue Analysis)

Design Validation & Review

Project Execution

Technical Skills

- **Designing & Drafting:** UG-NX, Catia & other CAD Module such as Creo-4.0, SolidWorks 2012, AutoCAD
- **Static Analysis, Topology Optimizations & Thermal Stress Analysis:** With Ansys Mechanical Workbench, NX-NASTRAN & Hyperworks.
- MS Office, Excel

Employment Details



May'20 with Mando Softtech India Pvt. Ltd., Gurgaon as Sr. Mechanical Design Engineer

Client Name:

Hyundai Motor, Kia Motors as well as overseas customers including General Motors, Ford Motors, DaimlerChrysler, and BMW

Role:

- Highly skilled in 3D/2D CAD design using NX, CATIA, Creo & SolidWorks.
- Experience in design of Plastic & sheet metal components.
- Ownership to ensure quality of deliverables & focus on continuous improvement.
- Ability to specify realistic tolerances using GD&T. Designing and developing various engineering products by implementing Design for Manufacturing & Design for Assembly (DFM/DFA) processes

- Managing design & development of brake systems, steering systems, suspension systems and advanced driver assistance systems
- Designing & developing the most advanced safety devices such as ABS (Anti-lock Brake System), ESC (Electronic Stability Control System), ECS (Electronic Controlled Suspension System), and EPS (Electric Power Steering).
- Currently associated with **EV Project** for developing **3KW Hub & Mid Drive Motor** for **Two-Wheeler**.
- Spearheading complete project management functions such as project planning, feasibility studies, concept engineering and detailed designing in PDM tool; assessing project specification and preparing technical proposals
- Executing research and development activities for various products simultaneously and ensuring the completion of large-scale projects within defined deadlines and budget
- Preparing and implementing inspection, testing procedures and quality assurance plan to check self & team output; ensuring adherence to the preset quality standards to deliver error-free output and maintain relevant documents for future reference; preparing design documents for auditing as per ISO standards

Aug'16- April'20 with Shree Balaji Alumnicast Pvt. Ltd., Gurgaon as Mechanical Design Engineer

Client Name:

RICO Auto Ind. – Oil Cover, Cylinder Head, Clutch Plate and many more

Sunbeam- Cylinder Head, Alloy wheel

Rockman- Engine Case, Oil cover, Engine cover, Brake Drum cover

Role:

- 3D/2D CAD design using NX, CATIA, Creo & Solidworks
- Mechanical components and modification of auto-component through Finite Element Method Analysis (FEMA)
- Analyzed the components to ensure design criteria and specific requirements
- Creating and reviewing the Bill of Material (BOM) & Engineering Drawings of the new and modified products; reviewing & releasing engineering changes and deviations
- Drafting and customizing the 3D/2D drawing of the parts/products/assembly using NX CAD and CATIA
- Resolving production bottlenecks by providing immediate remedial actions to the concern

Training Experience

Skill Lync. Chennai Tamil-Nadu. - January –April 2018.

- Advanced Sheet Metal Design using NX-CAD.
- Automotive Sheet Metal (BIW) Design using NX CAD.

Hindustan Aeronautics Ltd. LUCKNOW: June-July 2015

- Hydraulic Power Control & Engine Fuel Control System

Advanced Training Institute (Ministry of Labor & Employment) CHENNAI: March - April 2015

- CNC Turning, Programming and Operation Module I & II.
- TIG AND MIG Welding Technique in Aluminum & Stainless Steel

Education

- B-Tech in Mechanical Engineering from Bharath Institute of Science & Technology, Chennai in 2016 (with 7.25 CGPA)
- Intermediate from S M D S Krishak Inter College Basti U.P in 2011 (with 69.9%).
- High School from SMHHS School Basti, U.P in 2009 (with 65%).

Hobbies

Cycling, Badminton, Cricket

Personal Details

Date of Birth: 10th April 1994

Languages Known: English, Hindi & German (Basic Learning)

Present Address: GH-1, SIDCO Aravli Appartment, 803, Sector 1, IMT MANESAR, Gurgaon, Haryana -122050

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