SAI KRISHNA. A
CAE ENGINEER
Experience: 3.9 years

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Objective

To pursue a challenging position and be a part of reputable organization that will provide me enough opportunities to expand my learning, knowledge and skills in CAE domain and also achieve goals of company that focuses on customer satisfaction and customer experience through well determination and smart work.

Experience Summary

- Currently working in **Marutee Design & Engineering Pvt ltd**, Benguluru as a CAE Engineer for past 3.9 years from Jan-2018.
- Currently Deputed to **Force Motors Limited**, Pune as a Durability Analyst.
- Worked as an Production intern in RS evaporator module at SUBROS Ltd, Noida from Jan2017 to June2017.
- Experienced in Linear, Non-linear and dynamic analysis using **Abaqus, Optistruct and Radioss**.
- Handled Various Assemblies for FE modeling and connections in automotive domain for NVH, Durability and Crash simulations.

Education Summary

Degree and Date	Institute/University	Major and specification	Percentage
M.Tech.2017	Amity University–Noida	Automobile Engineering	8.14CGPA
B.Tech2014	Sri Vasavi Engineering College	Mechanical Engineering	74.8%

Professional Summary

- Responsible to perform finite element modeling and applied boundary and loading conditions using Hypermesh pre-processor for automotive components.
- Debugging the model with different solver like Abaqus and Optistruct.
- Analyzed the results involving von-mises stress, forces and displacement using Hyper view post processor.
- Plotted curves and graphs of the result data using data analysis tool Hypergraph for Durability and impact.
- Conducted structural analysis of various automotive components.
- Handled projects related to Durability, Strength, Deflection and Stiffness analysis of BIW components.
- Worked closely with the product development teams and provide CAE support to validate the designs.
- Recommended design improvements based on CAE results.
- Maintained the database of different projects which was useful in reducing modeling time and comparing vehicles of different platforms.
- Created comprehensive presentations to report results obtained and conclusions to the higher management.
- Exposure of customer interaction, Communication, coordination& responsible for Project Delivery to client in timely manner.
- Good Knowledge on Strength of Materials and Engineering Mechanics.

Skill Set

- Pre-processor : **HYPERMESH, ANSA.**
- Post processor : **HYPERVIEW.**
- Solvers : **ABAQUS, OPTISTRUCT and RADIOSS.**
- Operating system : **Windows 7/8.1/10**
- Microsoft tools : **Word, Excel, PowerPoint.**

Significant Projects

FRF Strength Analysis of Engine AC Compressor & Retarder mounting Brackets Assembly :

- All the components in assembly are meshed with provided durability quality and standards.
- Connections are given at the specified locations mainly with RBE2 & RBE3 elements, contacts are defined at required locations.
- Deck setup is done with excitation locations in all 3 directions with 9G loading and peak frequencies are obtained from graphs in all directions.
- Strength analysis is carried out from obtained frequency results and stresses at those particular frequencies are noted down.
- Results obtained are viewed through postprocessor and checked all the results are under the acceptable criteria.
- Created a detailed presentation report with the obtained results.

Strength Analysis of A, B, C pillar trims :

- All the Pillar trims components in assembly are meshed with provided durability quality and standards.
- Connections are given at the specified locations mainly with RBE2 & RBE3 elements, contacts are defined at required locations.
- Various types of boundary and loading conditions are assigned for liner static & Non-liner static analysis.
- Strength analysis is carried out using Abaqus Solver and stress, displacement values are determined.
- Results obtained are viewed through postprocessor and checked all the results are under the acceptable criteria.
- Created a detailed presentation report with the obtained results.

Deflection Analysis of Quarter Panel, Tail Gate and Gap Header Assembly :

- All the components in the assembly are FE modeled with the desired quality criteria required for durability testing.
- Connections are established at the specified locations with RBE2, RBE3 elements and contacts were defined at required locations.
- Boundary conditions are defined at required locations, force and displacement loading is applied on the rigid applicator at different locations for several cases and specified local coordinate system.
- Deflection analysis is carried out using abaqus solver and all the errors are debugged during the run.
- Results are post-processed in hyper view. Displacement, Stress and Strain contours are obtained and verified whether results are in acceptable limits.
- Detailed report was created with the obtained results and proper conclusions.

Stiffness Analysis of Door Assembly:

- The components in the assembly are meshed with 2D- Shell and 3D- tetra mesh elements with the desired quality Criteria.
  RBE2 elements are created at required locations and defined beam elements at bolt locations. Contacts are created between components by creating sets.
- Boundary conditions and loads like force, displacement is created at specified locations with RBE3 elements at certain locations.
- 4G gravity load is applied for the bike chassis assembly and required outputs are requested in the input file.
- Stiffness analysis is carried out in abaqus, Nastran solver and results are plotted from post processing.
- Detailed report was created with obtained results.

Static Analysis of Bike Chassis Assembly with Front and Rear Loading:

- The Scope of the Project is to find out Strength of Chassis Parts under different types of loading like Front, Rear & Corner bending.
- FE modeling is done for Chassis Assembly, Connections are given by RBE2 & Weld Elements.
- Lumped masses are given at the CG points to define the overall Mass of Structure.
- C-Load is defined at Load points and constraints are given as per reality.
- Analysis is carried out for Structure and determined Stresses, Strains and results are validated in Hyperview.
- Detailed report was created with obtained results.

Drop Test Analysis of a Mi-fi Modem, Automotive ECU unit Assembly as per ISO standatds:

- Drop Test is carried out to find out the strength of the assembly when it is falling from certain height with velocity.
- The parts in the assembly like casing, PCB board, battery, USB port and all attached components are meshed with 3D tetra and hexa meshing.
- RBE2 elements are created at required locations and Contacts like TIE and sliding are defined between certain components. Various Nonlinear materials are applied for different components in the assembly and matched the weight of the assembly.
- Rigid wall or plate is created as a ground and contact is created between ground and the assembly.
- Velocity is given as a loading calculated from the known height of fall. The test is carried out for four cases at four corners of the assembly.
- Drop test analysis is carried out in abaqus as well as radioss solver and results and graphs are plotted from post processing.
- Detailed Presentation was prepared from obtained results.

Normal mode analysis of Chassis, Door, Hvac and Twin Compressor Assemblies (Optistruct):

- Normal mode analysis is conducted to check for modeling connectivity problems and determine mode shapes, frequency of various accessories brackets.
- All the components in the assembly are connected internally and assembly is constrained at certain fixed location in all DOF.
- A load collector is created with lanczos solving method and certain number of modes is given. A load step is created combining SPC and Lanczos load Collector.
- Normal mode analysis is carried out and results of natural frequencies and mode shape contours are plotted.
- Obtained Results are checked whether the various accessories brackets are meeting the desired criteria.

FE Modelling of Bumper Assembly:

- Bumper assembly consists of components like Bumper reinforcements, Bumper inserts, Bumper Spoilers, Headlamp cover, Crush can, Bumper protectors etc.
- The assembly is imported and all the symmetry checks and cleanups are done.
- The meshing is carried out in the mid surface with quad and tria elements with described quality criteria and thickness is given.
- Intersections, penetrations are cleared and all the checks like free edges, normals, duplicates, connectivity etc.
- Materials is assigned and connections like bolt, rigids etc are given.

FE Modelling of Exhaust Assembly:

- Exhaust assembly consists of components like exhaust manifold, catalytic convertor, muffler or silencer, tail pipe.
- The assembly is imported and all the checks are done and meshing is carried out the mid surface with quad and tria elements, proper quality criteria are maintained and property thickness is given.
- All the post modelling checks was done, material is assigned along with bolt, rigid and weld connections.

FE Modelling of Door Assembly with Connections:

- Door assembly consists of components like Hinge reinforcement, Intrusion bar bracket, Latch reinforcement, Outer panel and Inner panel, Window glass etc.
- The assembly is imported and all the checks are done and meshing is carried out the mid surface with quad and tria elements, proper quality criteria are maintained and property thickness is given.
- All the post modelling checks was done, material is assigned with bolt, beam, rigid and weld connections.

FE Modelling of other Assemblies like Chassis, Steering Manicon, Fuel Filling Door, Headlight assembly,TYRE are done as above and also carried out Dynamic analysis like Shock and Random Vibration Analysis using optistruct.

Academic projects

Research Paper: - HUMAN BODY MODELLING SUBJECTED TO WHOLE BODY VIBRATION EXPOSURE
M.TECH PROJECT: ANALYSIS AND OPTIMISATIONS OF AN AUTOMOTIVE AC EVAPORATOR. Performed at SUBROS LIMITED, NOIDA.

Strengths

- Can easily mingle with others.
- Handling the responsibilities and taking leadership.
- Hard working with smart attitude.
- Positive Nature and patience.

Personal Details

Languages	:	English, Hindi, Telugu & Kannada.
Hobbies	:	Badminton, Reading books & Travelling etc.
Address	:	Drno: 1-47-92/3, Near Ramalayam, Gollagudem Center, Tadepalligudem, W.G. Dist., A.P
DOB	:	21/11/1992
Driving license:		Yes
Passport	:	Yes
Nationality	:	Indian
Marital Status	:	Single

Declaration

I hereby declare that the above information is true to the best of my knowledge.

Place: Bangalore

Date: **Signature**