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NOISE AND VIBRATION ENGINEER

Keywords: NVH CAE, Performance & Correlation, Acoustic & Vibration, FEA.

PROFILE SUMMARY:

- Currently Working as a **Project Engineer** at FEV India Pvt Ltd. and having 8 years of experience in Automotive and Heavy Industries.
- Conducting aggregate level, GBIW, TBIW, Full vehicle NVH CAE FE modeling and Analysis.
- Hands on experience in projects like Sedan, Hatch back, SUV, SCV, CV, BS-VI and many more Programs.
- Proven capability in full vehicle Development of vibration and noise attenuation.
- NVH test and CAE Correlation for Verification of NVH performance against agreed programs.
- Competitive Benchmark Testing and Subjective Evaluation of Vehicle.
- Capability to enhance operational /administrative effectiveness and meet operational goals with cost, timelines and quality parameters.
- Performed root cause analysis study for NVH issue (NTF, VTF, Test issues) and generate new concept or proposals to meet the target, design optimization/VAVE proposal study.
- Worked in collaboration with design, NVH Test teams and deliver NVH CAE report conclusions.
- Capability to project leading, CAE process improvement and NVH CAE-Test Correlation.
- Graduated in Mechanical Engineering (B.E) from BEC, Bagalkot in 2013.

June'22-Present | FEV India Pvt Ltd | Project Engineer

❖ Full Vehicle Building, Analysis and Correlation for NVH Development of Vehicle.
- The CAE Model is built and performed the modal analysis.
- Identified the mode shapes and natural frequencies and constructed the modal map for full vehicle level.
- Identified and Prepared Reports for NTF, VTF, Dynamic Stiffness and proposing better design modification to improve the performance.
- The Final report shows the plots, graphs of the data acquired, Correlation and conclusion.

Nov'18-June22 | Tata Motors Ltd. (Tata Technologies Ltd) | Sr. CAE Engineer (NVH)

Hands on experience in projects like Sedan, Hatch back, SCV, CV, BS-VI and many more Programs

❖ Natural Frequency identification and modal mapping for the vehicle.
- The CAE Model is built and performed the modal analysis.
- Identified the mode shapes and natural frequencies and constructed the modal map for full vehicle level.
- Identified and Prepared Reports for NTF, VTF, Dynamic Stiffness and proposing better design modification to improve the performance.

❖ Evaluation of Steering Wheel NVH performance of SUV.
- The Project involved FRF analysis of Steering Wheel for contribution of rough road surface and driving speeds on steering wheel vibration, as well as characterizing steering system design parameters for improved NVH performance.
- Vibration Signatures is collected along steering Wheel can be used to predict the performance of it in CAE and correlating the test results.
- The final report includes the graphs of the data acquired, Correlation and conclusion.

❖ Supported for SCV for evaluation of performance of NVH.
- The Project conducted for the evaluation of Transfer functions (NTF, VTF) in vehicles.
- Hard point evaluation and performance check.
- Route cause analysis is done for the engine mount boom noise.
- NVH proposal is given for the improvement and FE Modeling methods developed for evaluation.

❖ Test-CAE Correlation of TBIW for global and Sub System Modal Analysis.

- The CAE Model is built and updated as per the test vehicle after physical observation for correlation.
- Performed CAE Modal Analysis and identified the mode shapes of sub system and global modes of vehicle.
- Correlation is performed with the test results and identified mismatching correlation modes.
- NVH CAE Model is improved for the correlation and successfully correlated with test results.
- Final report includes the Modes, summary of improved correlation of TBIW Global and aggregates Modes.

May'15-Oct'18 Mahindra Research Valley (Zuti Engineering Solution) CAE Engineer (NVH)

Hands on experience in projects like Compact SUV (XUV300, Thar), SUV (TUV300) and many more Programs.

❖ Integration and Modal Analysis of Full Vehicle BIW Structures.

- Organize the sub-assembly into single assembly of BIW structure.
- Assigning the material properties, element properties and creating the connections like Bolts, Adhesives, Spot-Welds and Arc-Welds.
- Spot-weld debugging for existed errors while spot-weld realization.
- Full vehicle is performed with Modal analysis and first few modes are identified.
- The final report shows the energy and mode shapes. NTF, VTF, and Dynamic Stiffness. Including Design Proposals for better performance.

❖ Design Proposal of BIW and Closure assemblies for NVH Improvement.

- Geometry Check and cleanup is done. Extraction of mid-surface for Sheet metal Components. Creating FE 2D and 3D model for various BIW and other assemblies.
- Assigning the material properties, element properties and creating the connections like Bolts, Adhesives, Hemming, Spot-Welds and Arc- Welds.
- Quality validation in terms of meshing basic quality criteria and cleaning penetration and intersections.
- Preparing the model for free-free run and validate the mesh and connectivity between components as per the standards. Final Report Involves the modified structures with design proposal and mode shapes.

FE Modeling, Analysis and Development of other Parts:

- Exhaust System, Suspension System, Steering System, Chassis Assembly, Sub-Frame, Closures.

SKILL SET:

- CAE Tool : Hypermesh, Hyperview. Hypergraph. Msc-Nastran.
- Industrial Tool : Siemens LMS Test-lab, **Sensors** (B&K Microphones, Accelerometers)

HOBBIES:

Reading, Travelling, Music-Instrument Listening, Learning.

PERSONAL DETAILS:

Date of Birth : 24-07-1991
Languages : English, Kannada, Hindi, Telugu, Tamil.
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