Abhishek Hiremath

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# Summary

**Key Expertise:**

* B.E with 5+ Years of experience in CAE.
* Worked on Strength & Durability analysis and on Welding Process simulation analysis for BIW.
* Member of Youth Advisory Board to Chief operating officer in LTTS.
* Experienced in both Linear and Non-Linear Static simulations and Explicit Analysis.
* Good understanding and problem-solving skills.
* Knowledgeable in structural FEA design at component level and sub-systems level.
* Strong abilities in ensuring timely completion and delivery of the project.
* Experience in working with cross-functional teams to achieve corporate objectives.

**Experience Summary:**

* Worked as Onsite Engineer at Honda R&D Centre Thailand.
* Currently working as a Sr. CAE Engineer in Larsen & Toubro Technology Services, Bangalore from September 2016 to till date.
* Leading a Team at Offshore Projects.
* Worked on CAE and Testing Co-Relation projects

**Work Summary:**

* Experience in tools like ANSA, Abaqus, Nastran and Hyperworks.
* Good Knowledge in basic concepts of strength of material and finite element methods.
* Expertise in FE modeling procedures and validation methods.
* Performed Linear and Non-Linear analysis for automotive assemblies like automotive BIW & Closures.
* Experienced in Results interpretations and providing design suggestions.
* Exposure to Fatigue life calculation.
* Exposure to work with multiple overseas clients.
* Coordinating with cross-functional teams for smooth execution of project

# Skills



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**Pre-Processors** : Ansa

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**Solvers** : Abaqus



#### : Nastran

: Design Life (nCode)



**Post-Processor** : Hyperview



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#### : Metapost



: Abaqus Viewer



**Programming** : Python



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**Language**

**Presentation** : MS-office



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# Experience

### Sr. CAE Engineer

#### L&T Technology Services Limited

Sep 2016 - Present (5 years 1 month +)

1. **Strength Analysis of BIW:**

Client : Honda Japan, US

Pre-processor : ANSA Solver : Abaqus Postprocessor : Hyperview

To find the Plastic Deformation in BIW for Transportation Load Cases (**Tie-Down, Towing and Jack-Up, Luggage Hook, Spare tyre**)

Role & Responsibility:

* Creating Front, Mid and Rear Cut-Sections of BIW.

##### Creation of spot welds welds and realizing the welds by assigning the actual parts with the actual weld diameter.

* Creation of adhesive lines and realizing with the customer specific length, width and height with zero gap to the shell parts.
* Refinement of mesh near interested regions.
* Applying Loads using connector element and defining BC’s.
* Defining Contacts and Non-Linear Material Properties.
* Deck Preparation.
* Performing Non-Linear Static analysis
* Post processing of results (PEEQ and Critical Load).

1. **Strength Analysis of BIW:**

Client : Honda Japan, US

Pre-processor : ANSA Solver : Abaqus, Postprocessor : Hyperview

(Non-Linear static and Explicit both for Co-relation of test results)

To find the Plastic Deformation in BIW for Transportation Load Cases & co-relation with Test Data (**Tie-Down, Towing and Jack-Up**)

Role & Responsibility:

* Creating Front, Mid and Rear Cut-Sections of BIW.

##### Creation of spot welds welds and realizing the welds by assigning the actual parts with the actual weld diameter.

* Refinement of mesh near interested regions.
* Applying Loads using connector element and defining BC’s.
* Defining Contacts and Non-Linear Material Properties.
* Deck Preparation.
* Performing Non-Linear Static analysis
* Post processing of results (PEEQ and Critical Load).

1. **Fatigue Analysis (Life Cycle Calculations):**

Client : Honda US

Pre-processor : ANSA Solver : Abaqus,nCode Postprocessor : Hyperview

To find the Life cycles of the Mounting Brackets of Seats (**Driver & Passenger Seats, 2nd row seats , 3rd row seats, Luggage hook, A,B Pedals**)

Role & Responsibility:

* Creating Cut-Sections of BIW.
* Simplifying Seats modelling and mounting to the BIW.

##### Creation of spot welds welds and realizing the welds by assigning the actual parts with the actual weld diameter.

* Refinement of mesh near interested regions.
* Calculating Load to put moment at seat Head and defining BC’s.
* Deck Preparation.
* Performing Linear Static analysis And nCode Run.
* Post processing of results (Life-Cycles).

1. **Closures Durability**

Client : Honda Japan, US

Preprocessor : ANSA Solver : Abaqus Postprocessor : Metapost

To find the Stresses in BIW and Door **(Door Sag Analysis, Hood, Fuel Lid Analysis, Tailgate)**

Role & Responsibility:

* Creating Cut-Sections of BIW.
* Refinement of mesh near interested regions.
* Creating Contact Pairs.
* Creating Connectors.
* Applying Loads and defining BC’s.
* Deck Preparation.
* Performing Linear Static analysis
* Post processing of results (Stress and Deformation).

1. **Modal Analysis (Natural Frequencies and Mode shapes):**

Client : Honda US

Preprocessor : ANSA Solver : Nastran Sol103 Postprocessor : Hyperview

To find the Natural Frequencies and Mode shapes in BIW for Rear Radar Mounting Assembly

Role & Responsibility:

* Creating Cut-Sections of BIW for different Load Cases.
* Mounting Radar Unit to BIW.
* Adding Masses for other units of Assembly and Radar Unit at COG location.
* Deck Preparation.
* Performing Linear Static analysis (Sol103)
* Post processing of results (1st 3 Natural Frequencies and Mode shapes).

1. **Durability Analysis of BIW:**

Client : Honda Japan, US

Preprocessor : ANSA Solver : Abaqus, Nastran Postprocessor : Hyperview

To find the Stress & Deformation in BIW for Human Operation Load Cases (**A, B & C Pedals, ParkingBrake, Change Lever & Seat Moment, Grab Handle , Spare Tyre**)

Role & Responsibility:

* Creating Cut-Sections of BIW for respective load case needs.

##### Creation of spot welds welds and realizing the welds by assigning the actual parts with the actual weld diameter.

* Refinement of mesh near interested regions.
* Applying Loads and defining BC’s.
* Deck Preparation.
* Performing Linear Static analysis
* Post processing of results (Stress and Deformation).

1. **Roof Deformation Analysis (Snow Load & Heat Blower)**

Client : Honda Japan

Preprocessor : ANSA Solver : Abaqus, Nastran Postprocessor : Hyperview

To find the Snap thru location on Roof Panel for Snow Load and Heat Blower Load cases. Role & Responsibility:

* FE-Modelling of Roof Assembly.
* Creating Spot and Adhesives between parts.
* Applying Pressure Load for both Snow and Heat Blower Load cases and defining BC’s.
* Defining Contacts and Non-Linear Material Properties
* Deck Preparation.
* Performing Non-Linear Static analysis
* Post processing of results (Deformation and PEEQ).

1. **Welding Process Simulation**

Client : Honda Japan

Preprocessor : ANSA Solver : Abaqus, Nastran Postprocessor : Hyperview

FE pre-processing, Processing and Post processing of welding process sequencing effect on BIW. Role & Responsibility:

* FE-Modelling of A, B and C pillar of BIW
* Creating Spot between parts.
* Applying Pressure Load at specific Spots at a sequence and defining BC’s.
* Post processing in Hyperview.

1. **FE Modeling and Test run Subsystems :**

##### Worked on various subsystems such as,

1. Body (BIW).

##### Exterior bumper front and rear.

1. Suspension front and rear.

##### Door trims front and rear.

1. Tailgate and bonnet.

##### A,B,C Pillars.

1. Fuel Lid
   * The input CAD is checked visually, estimation and delivery dates were shared to customer.
   * Shell and solid mesh parts were segregated and meshed accordingly as per the customer provided quality criteria and modeling guideline.
   * Appropriate connections such as nodal rigid bodies, constrained extra nodes, spot welds and

adhesives were created between parts.

* + Spherical, revolute and translational joints were also created at the required locations.
  + Basic checks such as duplicate elements, free nodes, massless nodes, rigid body dependency, contact checks, joint checks etc, were checked and fixed.
  + Subsystem is fired for test run and the animation is checked for unconnected parts and node shootouts.
  + Energy ratios, physical mass, mass addition, were evaluated and the final report is also made for the same.

# Education

### B. M. S. College of Engineering

#### B.E, Mechanical Engineering

2012 - 2016

**CGPA - 8.19**

### Chetan PU College Hubli

#### 10+2 (Science)

2010 - 2012

**Percentage – 85.5%**

### Basaveshwara New High School Bagalkot

#### SSLC (10th)

2010

**Percentage – 92.6%**

# Honors & Awards

### YABC-‘Youth Advisory Board to COO

Mar 2021

The purpose of the initiative is to tap the potential of Gen Z and Millennials and partner with the COO in various strategic projects and initiatives. Selected after a rigorous process of Evaluation.

### Employee of the Month

Jun 2018

Received for Best Performance. chosen from CAE across all teams.

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### Employee of the Month

Feb 2019

Received for Best Performance. chosen from CAE across all teams.

# Personal Details

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| **Date of birth** | **:** | **01/07/1995** |
| **Gender** | **:** | **Male** |
| **Father’s Name** | **:** | **Basayya Hiremath** |
| **Nationality** | **:** | **Indian** |
| **Marital Status** | **:** | **Single** |

**Declaration :**

## I here by declare that all the above given information’s and details are true tothe best of my knowledge.

#### Date : Place :

Your truthfully Abhishek Hiremath