**Curriculum Vitae**

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**Career Objectives**

* To effectively use skills acquired in the field of CAE and also learn new skills for the betterment of the organization.

**Career Summary**

* 3 years Experience as a **Structural Analysis Engineer** at **ADE,DRDO**,Bengaluruand 11 months internship at **Chivaro Tech**,Bengaluru.
* Good knowledge in CATIA V5 surface modelling,part design and assembly.
* Expertise in MSC Nastran/Patran(2012), Hypermesh 11.0,Ansys CAE tools.
* Expertise in Linear Static and Dynamic Analysis of Composite and Metallic structures.
* Basic knowledge in MATLAB.
* Experience in preparing Stress Reports and Tech Memos.

**Software Skills**

* **MSC-PATRAN/NASTRAN**-Finite Element analysis,Goemetry Cleanups and Mesh generation, Analysis Deck Preparation
* **HYPERMESH**-Goemtry clean-up operations, Mesh generation and Mesh Quality Checks.
* **CATIA**- Solid Model Development, Surface Modeling Techniques, Assembly
* **MATLAB**-Basic matrix operations,Generation of PSD plot from a stationary Random Vibration input.
* **MS/WORD/EXEL/POWERPOINT**-Preparation of Stress Reports,Memos,Generating .CSV files,Spatial Distributions,Slides.

**Academic Qualification**

* B.E in Aeronautical Engineering with overall 67.17% aggregate in year, 2014 from A.C.S College of Engineering, Kambipura-Bangalore.
* Diploma in Electronics and Telecommunication Engineering with a CGPA of 6.55 out of 10 in year, 2010 from the Institution of Electronics and Telecommunication Engineers, New Delhi.

**Work Experience**

**Current Company**

**Contract Engineer , DRDO Aeronautical Development Establishment (ADE), Bangalore.**

**Duration:** August,2016 – Present.

**Designation:** Structural Analysis Engineer.

**Project Summary**

* **Analysis of Flying Wing Aircraft**
* Geometry Clean-up of aircraft airframe for mesh generation. Airframe meshed with 1D and 2D elements. Element quality checks. Application of material properties and boundary conditions.
* Normal Modes and Buckling analysis carried out to verify and check the airframe model.
* Linear Static Analysis with Inertia Relief and Spatial Pressure distribution applied to the airframe which was carried out for various flight load cases to ensure the safety of the airframe structure.
* Linear Static Analysis for impact loads under 2-Point level,3-Point level and Tail-Down Landing Gear Load Conditions.
* Calculation of Bending Moment and Shear Force plots using Spatial distribution of mass with respect to the FRL.
* Calculation of Reduced Stiffness Matrix and Transformed Reduced Stiffness Matrix.
* Calculation off A,B,D matrices.Calculation of Equivalent Young's Modulus for 2D Orthotropic laminates.
* Estimation of Buckling factors and Tsai-Wu failure indices of the aircraft composite structure for given material allowables.
* Preparations of Reports and Presentations for design changes to be made to meet safety requirements.
* **Random Response Analysis due to Engine Vibrations**
* Geometry Clean-up of aircraft airframe for mesh generation. Airframe meshed with 1D and 2D elements. Element quality checks. Application of material properties and boundary conditions.
* 2D mesh generated for the LRU mounting brackets connected to the Airframe using RBE2 elements. Mass and C.G checks carried out.
* Frequency Response Analysis was carried out for a 1g enforced acceleration.
* Random Engine Vibration data in the Time Domain was converted to a PSD plot using the Gaussian process in MATLAB.
* Random Response Analysis for the airframe with LRU's was performed using the FRA response file and the PSD input obtained. This PSD input was applied to the engine mounting location.
* Results plotted for RMS Acceleration Response of mounting brackets to ensure their response was within the safe limit.
* **Wing Torsion Box Analysis**
* 2D mesh using quad elements was generated for the components. Application of material properties and boundary conditions.
* Normal Modes and Buckling Analysis was carried to verify and check the model.
* Linear Static Analysis for end fixed condition and bolt fixed condition.
* Preparations of Reports and presentations for necessary design changes.
* **INS Mounting Bracket Analysis**
* 3D solid tetra mesh generation for the INS mounting bracket.
* Linear Static Analysis and Normal Modes Analysis carried out to meet harmonization parameters.
* Strain Energy plots obtained to make necessary design changes to meet stringent frequency parameters.
* **FUEL TANK ANALYSIS**
* Linear static analysis of Mid and Side Fuel tanks for the given pressure load and boundary conditions.
* Stress and Displacement results were studied to make necessary model changes.
* Normal Modes analysis was carried out to find natural frequencies and stiffen tank panels using stiffeners.

**Previous Company**

**Engineering Intern, CHIVARO TECHNOLOGIES, Bangalore**.

**Duration**: October, 2014 – August, 2015

**Designation:** Structural Analysis Engineer.

* Aircraft Bracket Analysis, validation for stress concessions. Linear static analysis to obtain Von-Mises stresses .
* Linear Static analysis of Truck chassis subjected to a uniformly distributed load.
* Random Response Analysis of a truck tail lamp using PSD/ASD input. Checking of resultant RMS values at the input location and the maximum response of the structure for displacements and stresses using appropriate graphs.
* Linear Static analysis of car lift structure which uses counter weights.
* Air compressor tank analysis, Determination of maximum burst pressure sustainability of the tank.

**Academic Projects**

* **"DESIGN AND ANALYSIS OF AN AIRBUS A-300 WING" :-**
* Design of an AIRBUS A-300 swept wing using dimensions and measurements from hanger specifications.
* Designing of the wing components and skin was carried out in CATIA V5 R20 using part design for the ribs and spars and the aircraft wing skin using wireframe and surface design.
* Analysis was done using ANSYS WORCKBENCH 14.0 for Static structural and Normal mode analysis.
* Analysis of the wing carried out for maximum lift during take-off and other necessary boundary conditions required .
* Results obtained for Maximum deflection, maximum bending moment and natural frequency.
* **"TRANSISTOR BASED LINE FOLLOWER ROBOT USING OPTOCOUPLERS" :-**
* Use of NPN transistors which controls the change in base current which is connected to the motor.
* Use of one IC LM 324,four 10k trim pots, two (2N3904) transistors, two (1N4148) diodes, Three 1k resistors, four 10k resistors, two 270 ohms and 220 ohm resistors, two 4.7 resistors, two 33.2 k ohms resistors.
* Two DC geared motors :150 rpm , 5 volts, Four IR pairs, 9 volts DC rechargeable battery.

**Key Skills and Strengths**

* Ability to work in a team to complete projects on the given time schedule.
* Hardworking and dedicated towards project completion in the given time frame.
* Find innovative ways to solve problems in CAE.
* Good understanding of how CAE software's work and function.
* Good communication and interpersonal skills.