**SATHIYA**

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## EXPERIENCE SUMMARY:

* Skilled Aerospace Engineering professional having a 6.5 years of experience in Stress Analysis.
* Currently working as Consultant (Stress Analysis) at Capgemini Technology Services India Limited, Bangalore from February 2018 to till now.
* Worked as Senior Design Engineer (Stress Analysis) at QUEST GLOBAL, Bangalore from January 2017 to January 2018.
* Worked as Senior Design Engineer at CYIENT LTD (formerly Infotech Enterprises Limited), Bangalore from November 2013 to December 2016 (from June 2015 to Dec 2016 deputed to GKN Aerospace Bangalore).
* Worked as Apprentice Trainee for 6 months in ADE and Engineer (Contract) at Pieazo Systemtech Pvt Ltd (Deputed to Aeronautical Development Establishment), Bangalore for 10 months.
* Good experience in Stress Analysis of aircraft components using hand calculations (Classical methods).

## SKILL PROFILE:

CAE software expertise **:** MSC/NASTRAN-PATRAN, Hyperview & Basic of Hypermesh

Airbus specific tools : ISAMI, NASGRO.

UTAS Tools : ESOM.

MS Office : Word, Excel & PowerPoint.

## AREAS OF EXPERTISE:

* Experience in static analysis sizing of A350-1000, -900 (C-maturity, Check stress and Batch 3 certification) composite and Metallic Parts of Rear Spar
* Experience in A350-900 static justification on wing trailing edge panels for the PIP activity
* Experience in static and F&DT analysis justification of Engine mounts for A380, A330 and A300 programs
* Experience in SRM (Structural Repair Manual) and ADL, static and fatigue strength justification of structural repairs
* Experienced in Aircraft wing and fuselage Structures.
* Good understanding of aircraft metallic and composites stress analysis.
* Experience in Static (SOL 101), Dynamic (SOL 103).
* Having minimal Experience in Finite Element Modeling and Nastran deck preparation.
* Theoretical knowledge on aircraft structures and Strength of materials.
* Good communication skills and a pro-active approach to problem solving

## ACADEMIC PROFILE:

* Bachelor of Engineering (Aeronautical) with 74.0% from PMR College, under Anna University, Chennai (2011).
* H.S.C with 78.9% from TamilNadu State Board (2007).
* 10th with 82% from TamilNadu Board (2005).

## WORK EXPERIENCE:

1. Name of company : Pieazo Systemtech Pvt Ltd (Deputed to ADE, Bangalore)

Period : Jun 2012 – Oct 2013 (Worked as Trainee in ADE for 6 months)

Designation : Junior Engineer

1. Name of company : CYIENT Ltd (formerly Infotech Enterprises Ltd.) , worked in

Customer Location GKN aerospace, Bangalore

Period : Nov 2013 to Dec 2016

Designation : Senior Design Engineer (Level 3)

1. Name of company : QUEST Global

Period : Jan 2017 to Jan 2018

Designation : Senior Design Engineer

## PROJECTS PROFILE:

### PROJECT WORKING AT CAPGEMINI IN INDIA:

1. **Static and F&DT analysis for One-Off Repairs/Concession on A300 and A310 Engine Mounts in the frame of Extended Service Goal**

Location Capgemini Technology Services India Limited

Title Static and F&DT analysis for One-Off Repairs/Concession on A300 and A310 Engine Mounts for Extended Service Goal.

Client SOGETI, France.

Role Team Member

**Description:**

The static analysis justification on A300 and A310-600 front and rear Engine mount is carried out by applying the max damage on engine mounts sections for one-off repair extended service goal analysis.

**Responsibilities:**

* Applying the damage on Minimum material dimension
* Calculation of moment of inertia and section area with applied damage
* Hand calculations is performed based on Bruhn method to calculate the RF for static analysis justification on engine mount sections.
* Lug analysis justification is performed on ISAMI
* Summarize the restricted area for ESG and created the stress dossier covering static and F&DT analysis.

1. **Structural Repair Justification for Front Engine Mount Beam and Shackle on A380 RR and EA Engine Mounts**

Location Capgemini Technology Services India Limited

Title Static Repair Justification for RR Front Engine Mount Beam and Shackle

Client SOGETI, France.

Role Team Member

**Description:**

The static and fatigue and damage tolerance analysis is performed for Structural repair justification on A380 Engine mounts. The static analysis is carried out using the hand calculation and ISAMI lug module. The fatigue analyses are carried out according to AFI (AIRBUS Fatigue Index) method by applying the spectrum loading whereas the damage tolerance analyses are carried out for single and multiple load path scenarios.

**Responsibilities:**

* Hand calculation is performed for Lug analysis justification
* Buckling analysis is performed through hand calculation
* Hand calculations for fatigue life, crack propagation and residual strength analysis through ISAMI
* DT analysis using SC01, CC02, TC01 and TC03 etc. crack growth models (NASGRO)
* Determination of critical crack using Kc0 calculation and detectable crack size.
* Preparation of stress dossier for both static and F& DT analysis

1. **Static and Fatigue validation of Thrust load path for Core blade off in A330 Neo**

Location Capgemini Technology Services India Limited

Title Static and Fatigue validation of thrust load path for core blade off in A330

Client SOGETI, France.

Role Team Member

**Description:**

The fatigue validation analysis and prepare the Technical note for Fatigue validation of Core Blade off in A330 neo. The technical note is justified for partial core blade off and Full core blade off with summary creation for Thrust link lugs, Engine lugs, yoke lugs, Axis and welded joint.

**Responsibilities:**

* Lug analysis is performed for static justification using the vibratory
* Creation of Wohler curve for high cycle fatigue
* Calculation of mean and alternate stress using Haigh diagram
* Damage calculation to validate the safe operation of aircraft with CBO loads
* Creation of Dossier for the Core blade off for thrust load path on A330 Neo

1. **Static and F&DT analysis and justification reports for Front and Rear Engine Mount Beam and shackle for A380 and A320 Repairs.**

Location Capgemini, Bangalore, India

Title Static and F&DT analysis and justification reports for Front and Rear Engine Mount Beam and shackle for SRM for A380 for EA and RR Engines

Client SOGETI France

Role Team Member

**Description:**

Daily repairs are performed parallel with other projects. Objective of this project to prepare the static and Fatigue justification for repairs occurred during the service to continue safe operation for flight. Samples of the damages covered are scratches, Nicks and gauges on machined engine mount components. The justification and repair instructions are provided based on CMM, SRM and ADL.

### PROJECTS WORKED AT QUEST GLOBAL IN INDIA:

1. **Boeing 787- Rolls Royce Trent 1000 Engine Static Strength validation of Bolted Joint analysis on the Inner Fixed structure**

Location Quest Global, Bangalore, India

Title Boeing 787 – RR Trent 1000 Engine static strength validation of Bolted Joint analysis on the Inner fixed structure analysis

Client UTAS, Bangalore

Role Team Member

**Description:**

The scope of this project is Static Strength Validation of the IFS bond panel of Boeing 787- RR Trent 1000 engine. Static analysis is performed in the IFS bond panel for the bolted joints to the Aft Core Cowl.

**Responsibilities:**

Loads extraction from the SFEM, Performing the static strength validation in the bolted joints

1. **Boeing 787- Rolls Royce Trent 1000 Engine Fatigue and Static Allowable Damage Limit strength validation analysis for the Latch Beam and Hinge Access Panel**

Location Quest Global, Bangalore, India

Title Boeing 787 – RR Trent 1000 Engine Fatigue and static Allowable Damage Limit strength validation analysis

Client UTAS, Bangalore

Role Team Member

**Description:**

The scope of this project is Static Strength Validation of the Thrust Reverser Hinge Access Panel of Boeing 787- Trent 1000 engine. Static and fatigue Allowable damage limit is substantiated by the analysis considering dents, edge damages, hole, missing fasteners, and surface damages in the panel.

**Responsibilities:**

Loads extraction from the DFEM, performing analysis by considering damaged area in the Panel

### PROJECTS WORKED AT CLIENT LOCATION (GKN AEROSPACE) IN INDIA:

1. **A350 XWB INNER REAR SPAR\_ FEM Validation of Side Stay Cleat SFEM**

Location GKN Aerospace, Bangalore, India

Title A350 XWB REAR SPAR\_ FEM Validation of Sidestay Cleat SFEM

Client GKN, UK

Role Team Member

**Description:**

The scope of this project is to validate the Sidestay Cleat SFEM for the Free-Free analysis, Equilibrium check and strain energy check are performed for the validation of Sidestay cleat.

**Responsibilities:**

Loads application on the Sidestay cleat, performing validation checks

1. **A350 XWB INNER REAR SPAR\_ Structural Justification of Composite Static Analysis**

Location GKN Aerospace, Bangalore, India

Title A350 XWB REAR SPAR\_ Structural Justification of Composite Static Analysis

Client GKN, UK

Role Team Member

**Description:**

The scope of this project is Static Strength Validation of the Composite rear Spar of A350 XWB on Fuel Pump attachment plates and SideStay location. Corner Unfolding analysis, Filled Hole analysis and Damage Tolerance analysis has carried out using the exceedance study on inner rear spar Fuel Pump and Sidestay location.

**Responsibilities:**

Loads extraction from the IFEM, Understanding the modification in Design, Calculation of Exceedance Factor and performing analysis for the Critical RF

### PROJECTS WORKED AT CYIENT OFFSHORE IN INDIA:

1. **A350 XWB REAR SPAR\_C Maturity Composite Analysis and Stress Dossier Preparation**

Location Cyient Limited, Hyderabad, India

Title A350 XWB REAR SPAR\_C Maturity Composite Analysis and stress Dossier creation

Client GKN, UK

Role Team Member

**Description:**

The scope of this project is Static strength predictions for the rear Spar of A350 XWB on Inner splice joint location. Corner Unfolding analysis, Filled Hole analysis and Damage Tolerance analysis has carried on inner rear spar splice joint location. Also the detailed Dossier for the A350-1000 rear spar Inner splice joint components along with the QGR presentation has been generated in line with the Airbus standards and Quality.

**Responsibilities:**

* Loads extraction from the IFEM, describing loads case combination and performing analysis.
* Detailed RF Summary Generation, Dossier Preparation, and QGR Document preparation

### PROJECTS WORKED AT ADE IN INDIA

1. **Static and Normal Mode analysis of Equipment Cage**

Location Aeronautical Development Establishment, Bangalore, India

Title Static and Normal Mode analysis of Equipment Cage (Metallic Analysis)

Client Indian Airforce

Role Team Member

**Description:**

A number of cut out have been introduced in the equipment cage of Rustom -1aircraft to reduce the weight reduction. The stress and displacement of equipment cage with all cut out is obtained for the specified inertial load through finite element analysis the values are compared with the earlier equipment cages without cutout for the Validation.

**Responsibilities:**

Analysis and Meshing of the Equipment cage with the inertial loading is applied. Result Validation by comparing it with without cutout.

## PERSONAL PROFILE

Date of Birth: 02/April/1990

Father’s Name: Santhalingam K

Gender: Female

Marital Status: Single

Languages: English (RWS), TAMIL (RWS)

Passport No: M3573257

Hobbies & Interest Badminton, Carom

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