

Balaji Rajakumar

Experienced Lead / Principal Engineer

**Mechanical Engineer with over 13 years of progressive Experience in Aerospace and Mechanical Engineering domain. A Master’s Degree holder in Mechanical Engineering and looking for new opportunity and able to join immediately**



[balaji7281@gmail.com](mailto:balaji7281@gmail.com)



+91 9980539569



Bangalore, India



[linkedin.com/in/balaji-rajakumar-b4191221](https://www.linkedin.com/in/balaji-rajakumar-b4191221)

**PROFESSIONAL SUMMARY**



* Project Management and Product Development experience in Aircraft Gas Turbine Engine

and Heavy Engineering companies.

* Product Design, concept development, Detail design, DFMEA, Design for Assembly and DFM experience of 5+ years in Aerospace Gas Turbine Engine OEM’s and Heavy Industries
* Sheet metal Fabrications design, castings and weldment design, Fastener selection and GD & T experience in Heavy Engineering Industries and Aerospace companies
* Advanced level analyst with over 8+ years of experience in static, vibration and Fatigue analysis of Gas Turbine Engine components & casings, Locomotive structures, wind Turbine structures and Heavy Engineering equipment and structures
* Manufacturing, Assembly and Repair Team issues resolution and manufacturing concessions review experience in Aerospace and Heavy Engineering Indutries
* Project planning, Risk management, Resource allocation, Business metrics monitoring and control. Managed Aircraft Gas Turbine New product development project to a tune of $1 million
* Proficient user of Solid works, Siemens UG NX , ANSYS, Hypermesh, MS Project and MS Office suite and familiarity with other CAD software such as Pro-E

**WORK EXPERIENCE**

**Principal Engineer/ Lead**



*Rolls-Royce Plc*

*11 / 2015 – 02 / 2019*

*Aircraft Engine Manufacturer*

*Achievements / Tasks*

* Lead and delivered Aircraft Gas Turbine Engine Externals Design projects for Trent XWB 84EP Engine which is for Airbus A350 Aircraft
* Conceptual and Detail design of Aero Engine External Components like Oil, Air and Fuel system components as per CS25 certification and Rolls- Royce Design process requirements
* New development Engine (Trent XWB-84EP) requirements understanding, design scope finalisation, risk management, concept design of in scope components, detail design, DFMEA, stakeholder meeting, issues resolution
* Proposed and completed Engine cost reduction projects which lead to $ 0.5 million of

shop floor savings on a particular engine program per year

* Lead Integrated Global Project Team meetings involving Manufacturing

Engineers, suppliers and other stake holders from UK, Indianapolis and India

for collaborative decision making, guidance and root cause investigations.

**Principal Consultant / Manager**



*Genpact Ltd*

*08/2013 – 11/2015 Bangalore*

*Engineering & IT Services*

*Achievements / Tasks*

* Managed a Team of 9 to 10 Stress Engineers working on GE Aviation and GE Transportation stress projects
* Executed and completed critical Aircraft Engine NAI Systems, Fuel Hydraulic systems, Air cooling systems LCF, Modal and Spectrum Analysis for different Engine Externals projects of GE Aviation as Offshore Consultant from Genpact
* Team level delivery management, resource allocation, prioritised projects based on customer requirements and delivery metrics management

**Team Lead**



*Cyient Ltd (Infotech Enterprises Ltd)*

*04 / 2011 – 08 / 2013 Hyderabad- India*

*Engineering Services for Aerospace and IT*

*Role / Tasks*

* Structural Analysis of Gas Turbine components like TEC, combustion chamber casing and heat shield as offshore Team Lead from Cyient for Pratt & Whitney Client
* Team management, project scheduling, client interaction, project delivery presentations
* Locomotive Engine cab, Crankshaft and accessories structural and Modal Analysis



**Sr ENGINEER FE STRUCTURAL**

*Germanischer Lloyd Gmbh/ DNV GL*

*03 / 2009 – 04 / 2011*

*Wind Turbine Certification Company*

*Role /Tasks*

* Modelling and Structural Analysis of wind Turbine Tubular Towers for designed capacity verifications using Solid works and Ansys
* Wind Turbine Tower Top adapter modal and Max stress assessment at tower top sections which includes the effect of bearing and swivel mechanism

**MEMBER R&D MECHANICAL**



*Universal Power Ltd*

*01 / 2008 – 03 / 2009* *Bangalore*

*Manufacturers of High Voltage Transformers*

*Achievements / Tasks*

• Played a lead role in Design and Analysis of nearly 30 new Development Transformers which includes design of pressure tanks and oil cooling systems

• Concept and detail design of transformers which is of sheet metal structures with appropriate stiffners like C, L & I sections using Solidworks software

• Analysis of complete Tank structure for pressure and lifting loads and providing stress recommendations based on analysis results from Ansys software

**ASSISTANT MANAGER- DESIGN**

*Jai Hydraulics Ltd*

*07 / 2006 – 02 / 2007 Chennai*

*Manufacturers of Hydraulic Jacks & Actuators*

*Role / Tasks*

*•* Design of hydraulic jacks, Hydraulic actuators and Dashpots as per Tonnage requirements of customer using Solidworks and Autocad

• Detail design of finalised Hydraulic cylinder piston assembly with seals as per required capacity

• Manifold and hydraulic circuit design

• Closely working with manufacturing engineer to resolve any manufacturing deviations of final machined part

**DESIGN ENGINEER**

*Prabhakar Products*

*07/2005 – 07/2006 Chennai*

*Manufacturers of Radar Equipment’s for Space organisations*

*Role / Tasks*

* Design of radar equipment’s which includes base structure, rotating structure and gear box design
* Theoretical Strength calculations for structure design



**EDUCATION**

***Master’s Degree in Mechanical Engg*.**

College of Engineering- Anna University

*07 / 2005 – 05 / 2008 Chennai, India*

* Computer Aided Design- 8.5 CGPA

***Professional Degree in Engg.***

The Institution of Engineers(India)

*08 / 1999 – 12 / 2003 Kolkatta, India*

* Mechanical Engineering

**SKILLS**



**Product Design ( 5+ years’ Experience )**

**Project Management ( 8+ years )**

**Mechanical Heavy Engineering Component Design & Analysis ( 4+ years )**

**Structural Analysis, CAE Analysis, Fatigue, Vibrations ( 8 years’ Experience )**

**3D Design software- Solidworks, UG Nx**

**Microsoft Project and office suite software**

**Analytical and strong Interpersonal skill**



**CERTIFICATIONS**

GD & T (04/2017 – 04/2017)

*Completed one-week Geometric Dimensioning and Tolerance Certificate course conducted by* ***Central Manufacturing Technology Institute (India)****.*



**MEMBERSHIPS**

Member- Project Management Institute (From 05 / 2019)



**PROJECTS- EXECUTED**

*Rolls-Royce- Development Aero Engine Project* (01/2018 – 02/2019)

*Skill set Gained / Proved-* ***Project Management***

Successfully planned the tasks and delivery schedules to meet the program timelines for flight test



Resource planning and critical activities identification for follow up and tracking



Supplier quote verification and approval for the activities



Completed committed component release technical gates for nearly 85 new parts with 90% and above project RFT targets



*Trent XWB-84EP Aero Engine Max Instro Mod* (04/2018 – 02/2019)

*Skill set Gained / Proved-* ***Product Design***

* Requirements understanding for 84EP Development First Engine to Test related Externals hardware changes
* Concept design and detail design finalisation for engine external hardwares like pipes brackets, harness etc
* Coordination with interface team like Casing Teams, controls team for interface agreement and concurrent engineering
* Completed 4 gates to release nearly 84 part drawings of pipes, brackets and related hardware for First Engine to test

*Aero Engine Projects Management*  (08/2013 – 05/2015)

*Skill set Gained / Proved-* ***Stress Analysis, Team Management & Project Management***

As Principal consultant/Manager in Genpact managed successfully GE Aviation Engineering projects that are outsourced to Genpact including resource allocations



Static and Modal Analysis of Aero Engine system level Components like Oil System Pipe lines, Fuel system lines with supports etc



Ensured and maintained RFT and on time deliveries of tasks that are executed by Genpact team supporting GE Analysis projects



*Heavy Engineering Hydraulic Jacks Design* (07/2006 – 02/2007)

*Skill set Gained / Proved-* ***Product Design- Heavy Engg***

Design of hydraulic Jacks upto 1500 Tons, Hydraulic actuators and Dashpots as Asst Manager Design in Jai Hydraulics Ltd.



**INTERESTS**

**Travel**

**Emerging Technologies**

**Trekking**

**Reading**