**CURRICULUM VITAE**

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**Professional Summary**

Heavy duty gas turbine mechanical engineer with 10 years of diverse experience in design, manufacturing,

validation, outage support and commissioning support. Have a master’s degree in mechanical engineering.

**Highlights**

Current Role ✓ **Technical Leader** at GE Power, **Managing team of 8 technically**

Technical Expertise ✓ **System level experience** in GE’s Gas Turbines namely 7FA.05,

9HA.01, 7HA.02 with **Global Clearance Technical Leadership on 6F.01, 6F.03**

and **9F.05**

Innovation ✓ **10 patents** till date – For new designs for rotating and static components of gas

turbines

Technical Skills ✓ Gas Turbine Assembly/Disassembly & Rotor/Casing Alignment, Gas Turbine Field

Support during Outage, Commissioning & Validation Tests, Gas Turbine Blade Tip

and Seal Clearances, Whole Engine Transient Thermo- Mechanical Analysis,

passive & Active Clearance Control, Static Component Design,

Leadership Skills ✓ Graduate of **GE’s Leadership Development Program “RISE” 2017 Batch**

Certification ✓ GE’s Six Sigma certification

**Major Projects**

**7HA.01 Ventilation Validation Engineering Test Lead at a Customer Site in Japan:** Lead the engineering effort to validate the Toshiba designed gas turbine enclosure and ventilation system and impact to blade tip clearances across gas turbine. Worked closely with site team and customer in influencing commissioning schedule to get a good test data. Monitored data from clearance probes, metal and air TCs in safeguarding the machine against unique customer ways of operating gas turbine detrimental to tip clearances. This effort resulted in uncovering critical issue that potentially would have caused catastrophic rotor failure due to rubs.

**GT Performance RCA and Troubleshooting:** Key member in analysis of a critical RCA at the organization level -major performance miss of a specific gas turbine.Worked closely with field engineers in reviewing borescope inspections of compressor and turbine parts, reviewed operational and turbine data and proposed corrective actions to improve turbine performance. This resulted in saving 5MM$ for GE and prevented potentially losing out on future orders. Authored commissioning manuals with borescope inspection guidelines that was used by field engineers to tune the gas turbine performance.

**6F.01 Clearances Global Lead**: Significant contribution to the program in improving performance from a -1.09% in SC η to +0.24%. Lead the design efforts to optimize the time constant between rotor and stator structures and balancing the gas turbine operability to set tight turbine blade tip clearances. Proposed several solutions to improve gas turbine performance.

**9E.04 Gas Turbine Assembly at a Customer Site in Japan:** Supported first of its kind gas turbine assembly at a customer site in Japan and reviewed and approved assembly clearances. Worked closely with site technical advisors for performing rotor drop and laser alignments.

**Professional Work Experience**

**General Electric, Bangalore, India** **June 2008 – Present**

**Gas Turbine Engineer**

* **Extensive experience as a clearance design engineer** to develop, simulate, analyse and verify transient hot running blade tip and seal clearances for heavy duty gas turbines and issue clearance and alignment drawings.
* Experience with 2D and 3D full engine thermal mechanical finite element analysis with **system level understanding of loads and boundary conditions**.
* Analysed 2D & 3D model for different gas turbine operating condition to estimate worst case clearances & casing out of roundness respectively.
* **Experience in reviewing borescope inspection** from hot gas path (HGPI) and major inspection (MI) and making a recommendation on part repair / replacement
* **Experience in communicating to end user** based on site tests on restricting gas turbine operability
* Closely worked with the component & operability teams and provided proposals for achieving minimal hot running clearances while ensuring safe turbine operation under all conditions.
* Worked with the heat transfer team for **thermal management** of casings in order to improve clearances and hence improve gas turbine performance.
* Worked with the component engineers on “Design for Clearances” analysing different casing and rotor architecture/materials and designing system optimized for cost and performance.
* **Experienced in handling all interfaces in gas turbine** including setting aerofoil tip diameters and hot gas path interfaces and gapping.
* **Experience in gas turbine full speed full load test** monitoring for clearances and worked on test data reductions validating test versus analysis prediction. Worked with component and testing engineers for defining & placement of instrumentations.
* **Performed tolerance stack ups** to determine cold clearance. Worked with component design engineers to improve machining drawing dimensioning methods and minimize the clearance variation.
* Provided **technical support for RCA’s**, gas turbine supplier deviations, approved clearances during **turbine outages** and shop floor issues during turbine assembly.
* Closely worked with tools team in developing clearance calculation tools.
* Conceptual design of gas turbine static structures and casings involving hand calculations, free body diagrams, evaluating various concepts and analysing them using finite element analysis.
* Extensively utilized clearance expertise in casings design.
* **Developed trade study** for single wall versus double wall compressor casing using 2D thermal mechanical Ansys model to compare system cost against performance.
* **Structural design experience** on casings, bearing housings and turbine support system.

**Rewards & Recognition**

* Received **15+ awards** and **global appreciations** for various categories like expertise, innovation, excellence in execution, clear-thinking, customer-centric approach, process improvement and inclusiveness on various projects in GE.
* Received the **most prestigious award** (ERD award) of GE India for **following projects**
  + **Impactful Early Career Engineer in the Year 2018** (< 10 year experience with significant business impact )
  + **Individual Award** under the category “**Customer Determine Our Success**” for **saving company 1MM$ in LD** on every sold machine on a particular GE gas turbine in the **Year 2017**
  + Best Project in **Technological Excellence “eSPA-Enhanced System for Power Augmentation”** in the **Year 2017**
  + Best Projectin **Process Excellence “Compressor Validation Rig Design”** for cutting **1MM$ in cost out** in the **Year 2015**
  + Best Project in **Technological** Excellence **“Axial Compressor Design”** for O&G customer in the **Year 2014**
* Recipient of **GE Bronze medallion** for **innovation** in technology (patent filling)

**Patents**

* “[Turbo machine with an angled abradable interstage seal and corresponding method of reducing a seal gap](https://www.google.co.in/patents/EP2620599A2?cl=en&dq=james+adaickalasamy&hl=en&sa=X&ei=OLUNVf2bOMGiugTwroHYBQ&sqi=2&pjf=1&ved=0CDMQ6AEwAw)” *July,2013*
* “[Systems and methods for an improved stator](https://www.google.co.in/patents/US20130236293?dq=james+adaickalasamy&hl=en&sa=X&ei=OLUNVf2bOMGiugTwroHYBQ&sqi=2&pjf=1&ved=0CCUQ6AEwAQ)” *Sept,2013*
* “[System and method for passively controlling clearance in a gas turbine engine](https://www.google.co.in/patents/US20130034423?dq=james+adaickalasamy&hl=en&sa=X&ei=OLUNVf2bOMGiugTwroHYBQ&sqi=2&pjf=1&ved=0CCwQ6AEwAg)” *Feb 2013*
* “[System and method for operating a turbine](https://www.google.co.in/patents/US20130022442?dq=james+adaickalasamy&hl=en&sa=X&ei=OLUNVf2bOMGiugTwroHYBQ&sqi=2&pjf=1&ved=0CEgQ6AEwBg)” *Jan 2013*
* "[Inner casing mounting system](http://google.com/patents/EP2949887A1?cl=en)" *– Dec 2014*
* “[Turbine engine assembly and method of operating thereof](https://encrypted.google.com/patents/EP3153682A1?cl=en)” – *Sept 2015*

**Technical Training**

* **Gas Turbine Assembly**: 4 Weeks training at GE's gas turbine assembly plant at South Carolina, US and **Belfort, France**. Extensive hands on training on gas turbine assembly/disassembly with detailed focus on casing alignment, rotor to casing alignment, blade tip & seal clearance measurements
* **Gas Turbine Full Speed Full Load Testing**: 4 Weeks training at GE's gas turbine full speed full load testing facility at **South Carolina, US**. Extensive hands on training on monitoring test data related to blade tip clearances, coordinated with test captain to control the gas turbine operation to minimize blade tip rub risks.
* **Six Sigma**: Successfully completed 1 week training of DMAIC @ GE.
* Green Belt Certification: Completed DFSS - Green Belt Six sigma certification at GE.
* Building Essential Leadership Skills: Was selected by GE for a meritorious full week training on leadership development.

**Education**

* Master’s in Mechanical Engineering from VIT University, Vellore, India,2008
* Bachelor’s in Mechanical Engineering from Saurashtra University, India,2006