RAHUL SANGOLE

Senior Structural Analyst, HMLD Engineering

OBJECTIVE

Work in a Black Belt role to gain cross-functional experience in the organization, develop leadership skills and identify my future career path

SUMMARY

- Key strength is addressing complex problems using methodical approaches involving critical thinking, hypothesis testing, attention to detail while looking at the bigger picture
- Team skills, project management skills and communication skills developed via work in customer facing RPS role, numerous VPI engine programs, SAE, and Univ of Michigan recruiting team
- Capability to quickly learn and work in new fields, proven through diverse RPS projects, and CSDL & NIST research experience
- Two Green Belt projects – One nominated for Chairman's Award 2010; the other was to lead SAE International's Executive Team
- Desire to develop cross-functionally before seeking leadership roles in the company

PROFESSIONAL EXPERIENCE

Applied Mechanics, HMLD Engineering, Cummins Inc *Mar '10 - Present*

Senior Structural Analyst

- Responsible for lube & cooling, and major casting components for B, C/L engine families
- Lead MR Base Engine analysts weekly meeting with analysts in US and India to promote team building and manage on-going & new tasks
- Analytical & Experimental Highlights:
  - Developed calibrated FE models to predict on-engine failures, and delivered solutions using analysis-led-design methods. Published CTRs, and eWiki articles detailing the learnings.
  - Developed analytical processes to simplify fatigue analysis of complex FEA for the Blazer & Shadow engine programs. Drove a $7.21/engine cost reduction for Blazer bedplate; Published block capability limits & installation criteria in AEB for Shadow.
- Capability Development Highlights:
  - Developed and conducted 3-week long Finite Element Analysis training for Applied Mechanics group at RMEP, 2013
  - Developed Functional Excellence Practice for analytical & experimental validation of MR turbocharger oil drain tubes, 2012
  - Developed processes for standardization of analysis and documentation of oil & coolant lines, to drive efficiency, consistency and quality, 2011
  - Led turbocharger stud capability development effort: Key results - Quantification of cold joint relaxation, measurement process differences across facilities, determination of high temperature material properties, 2011

Midrange Customer Engineering, Cummins Inc *Jan '08 – Mar '10*

Current Product Validation Engineer

- Led 7 step RPS projects addressing high warranty costs on Customer Engineering components
- Led geographically diverse teams comprising of designers, analysts, service & quality engineers, personnel at distribution centers & manufacturing plants, and external suppliers
- Utilized Fault Tree Analysis, FEA, DVA, reviewed metallurgical & metrological reports, supplier capability reports, conducted in-field testing to identify root causes of failure
- Developed Excel codes to drive processing efficiency and correct conclusions from reliability reports
- Core team member of 6S DMAIC project, 'Issue resolution process for South East Asia Off Highway products'

6 SIGMA PROJECTS

Reduction of Exhaust Gas Leaks between Cylinder Head & Exhaust Manifold

Sponsor: Shelley Knust, MBB: Maninder Singh, Team: Cummins

- Led a team of cross-functional engineers to identify factors contributing to high warranty costs due to exhaust manifold gasket and capscrew failures
- Improvements resulted in an annual savings of $140,000 for current product C/L engines; Multiple Step 6 and Step 7 actions – Improved gasket design taken to production, ESW and FE analysis procedures revised, critical material properties determined and published, application engineering bulletins updated, and service procedures updated.
- Nominated for the Cummins 6 Sigma Chairman's Award, 2010

Growth of SAE International in Emerging Markets
Sponsor: Ric Kleine, SAE Int'l President 2012, MBB: Maninder Singh, Team: SAE Int'l

- Led the Executive Team at SAE, Warrandale, PA in a project to define the business model for growth of SAE Int'l in India
- Coached the team about the 6S methodology and tools. Successfully overcame resistance to change the existing rooted thought-processes, and drove a data-driven decision making approach throughout the project's course
- Conducted Voice of Business interviews of SAE's leadership to define success. Voice of Customer and KJ of the Indian industry leaders and SAE India membership were used to extract requirements.
- Presented Indian market requirements and price points to the Board of Directors

Improvement of Interplant Traffic & Movement – Columbus City Project
Sponsor: Steve Charlton, Jennifer Rumsey

- Team member on 2013 Environmental Challenge 6S project

COMMUNITY INVOLVEMENT

Society of Automotive Engineers (SAE) Indiana Chapter *2011 - Present*

- Secretary and Communication Manager, *Jan 2012 – Present*
- Math and Science Committee, *Jan 2011 – Jan 2012*

University of Michigan Recruiting Team *2009 - Present*

- Represent Cummins at career fairs and corporate information sessions
- Conduct on-campus and phone interviews for internships and full time positions
- 'Buddy' for U of M interns and new-hires

Miscellaneous

- Book Buddies, 2009
- Arc Center for Excellence, 2010
- Mill Race Part Cleanup, Columbus City, 2012
- Volunteer at Cummins booth for Earth Day, 2013

ACADEMIC EXPERIENCE

Compliant Systems Design Lab, U of M *Fall '06 – Fall '07*
Research Assistant

- Designed and modeled non-linear compact torsional springs using compliant members
- Developed algorithms to optimize geometry and material parameters using Matlab, ANSYS Classic & Optimus to obtain any desired non-linear force – deflection behavior
- Generated a library of behavioral curves thru optimization & DOE for further research and development

Engineering Research Center U of M, National Institute of Science & Technology *Summer '07*
Intern

- Developed a semiconductor factory network simulator to investigate IEEE 1588 time synchronization techniques in distributed systems in industrial Ethernet
- Implemented modules handling data requests & reports in XML, JAXB complying with SEMI standards. Achieved weekly goals in conjunction with a team in NIST, Maryland.

EDUCATION

University of Michigan, Ann Arbor *Fall '07*
Master's in Mechanical Engineering

University of Pune, India *May '02 – Aug '06*
Bachelor's in Mechanical Engineering

PAPERS

- 'Precise Time Synchronization in Semiconductor Manufacturing', Proceedings of the IEEE 1588 Conference, October 2007
- 'Time synchronization for diagnostics and control in Ethernet-based applications', Proceedings of the American Controls Conference, June 2008

COMPUTER SKILLS

- Applications: ANSYS WB14.5, ANSYS Classic, FeSafe 6.2, Creo, MATLAB, LabVIEW, NI Diadem, Optimus, Minitab, Eclipse, Altova
- Computer Languages: C, C++, JAVA (J2EE, JAXB), MS Visual Basic, XML, HTML