

KAPIL SHARMA

401 Lincoln Ave., Apt 56, College Station, TX - 77840
(979) 393-8563 • kapil.s.aggie@gmail.com

SUMMARY

- Mechanical graduate with four years of industry experience in new product design, development and testing.
- Designed an innovative fixture for engine assembly line; a by-pass valve to reduce stopping distance of a vehicle in case of ABS failure (Published by SAE); 14-stage axial compressor and 4-stage turbine for a class project; Plexiglas window for optical measurements using PSP and TSP techniques in a research turbine.
- Recognized as employee of the month for designing a fixture resulting in savings of \$0.18 million every year since commissioning.
- Thorough knowledge of Machine Design, Vibrations, Fluid dynamics, Aero-thermodynamics and Turbomachinery.
- Excellent in analytical programming skills with Matlab; 3D CAD modeling with SolidWorks.
- Recognized for coming up with out of the box, yet very effective problem solving solutions apart from my ability to improve component designs and increase efficiency.
- Lead the development and testing of a new SUV for a successful launch and record sales figures.

WORK HISTORY

Turbomachinery Laboratory, Texas A&M University, College Station, TX (2008-present) **Graduate Research Assistant**

- Created 3D CAD model, assembled and instrumented the two-stage, high-pressure research steam turbine.
- Installed and setup a computer controlled system to measure inter-stage performance by traversing radially and circumferentially inside the turbine.
- Designed and installed a pneumatically controlled clocking mechanism for the research turbine.
- Calibrated various 5-hole probes at different Mach numbers for respective stage measurements.
- Machined critical parts of the turbine for troubleshooting the assembly of research turbine.
- Assisted the technical expert in rotor shaft alignment within a tolerance of 0.3 Mils/Inch (angular) and 2 Mils/Inch (offset) for 3000 rpm (max.).
- Facilitated the experimental setup for testing the performance of a linear blade cascade with varying stagger angles.
- Developed Matlab codes for data reduction and analysis.
- Configured LabView scripts for data acquisition.

TATA Motors Ltd., Pune, India (2005-2008) **Manager (Design & Development)**

- Maintained database for static, fatigue and fracture analysis of structural components for vehicle prototypes.
- Conducted accelerated durability testing and reliability analysis to judge life expectancy of the components.
- Tested and validated engine, chassis, brake, steering, HVAC and suspension system at vehicle and component level.
- Documented 7 new work guidelines for cost-effective testing procedures with reduced man-hours.
- Engineered a new in-house test track using GPS to replicate a remote test site which resulted in eliminating logistics cost and reducing output time.
- Contributed as a key member of various cross-functional teams (CFT) like New Product Introduction (NPI) and Quality Function Deployment (QFD) team.
- Managed logistics for conducting vehicle tests at remote locations and severe weather conditions.

TATA Motors Ltd., Pune, India (2004-2005) **Design Engineer**

- Designed a fixture for liner pressing process on the engine assembly line to reduce the material loss.
- Recognized as employee of the month for designing a fixture resulting in savings of \$0.18 million every year since commissioning.
- Created assembly drawings, including bills of materials and detail drawings, for the design of jigs and fixtures employed on the engine assembly line.
- Solicited feedback from machine operators to develop designs of highest quality and cost effectiveness.

SKILLS

- **Engineering Skills:**

Process Validation and Optimization
Root Cause Analysis & DFMEA

Product Development
Testing and Data Analysis

Creative Problem Solving
Project Management

- **Computer Skills:**

MATLAB/Simulink
C/C++, FORTRAN

SolidWorks
LabVIEW

AutoCAD
EUCLID

Abaqus (FEA)
STAR-CCM+ (CFD)

ACADEMIC PROJECTS

- Designed a 14-stage axial compressor, 4-stage axial turbine and a can-annular combustion chamber for an 80 MW Gas-Turbine as a class project (Team of four).
- Accomplished kinematic analysis of Rhino-XR3 robot with path-optimization and visual feedback using C++ (Team of three).
- Currently working on my Master's Thesis about the "Efficiency and Performance Analysis of a Two-Stage High Efficiency Steam Turbine".

PUBLICATIONS

- *Introduction of Bypass Valve in the Rear Brake Circuit of TATA SAFARI DICOR Vehicle with ABS System to Meet EEC/71/320 and ECE R-13* - K. Sharma, J. K. Chakrabarty, B. G. Bisen and R. Agur, 24th SAE Annual Brake Colloquium and Exhibition, October 2006, Grapevine, TX, USA.
- *Efficiency and Performance Analysis of a Two-Stage High Efficiency HP-Steam Turbine* - M. T. Schobeiri, H. A. Chibli and K. Sharma. Manuscript in preparation.

HONORS AND AWARDS

- Member of American Society of Mechanical Engineers (ASME) & Society of Automotive Engineers (SAE).
- Received a Silver Medal by *Central Institute of General Knowledge Learning* for securing 80% marks in National Talent Search Contest, 1996.
- Received a Silver Medal by *All India Schools Mathematics Teachers Association* for securing 87% marks in National Mathematics Olympiad Contest, 1998.

EDUCATION

- **Texas A&M University, College Station, TX** (Graduating: Dec-2010) (2008-2010)
Master of Science (Mechanical Engineering) – GPA 3.2/4.0
- **National Institute of Technology Karnataka, Surathkal, India** (2000-2004)
Bachelor of Engineering (Mechanical Engineering) – GPA 3.8/4.0

KEYWORDS

Design, Product Development, Research, Process Optimization, Validation, Problem Solving, Root Cause Analysis, Data Analysis, Cost Reduction.