

## ENGINEERING INTERN

### Summary

Automotive Engineer seeking Systems Engineer position at your esteemed organization with scope for career advancement and professional development.

### Skills

AutoCAD, Ansys, Cero, CATIA, HyperMesh, DFMEA, MS Office Suite, Fortran, C, MATLAB/Simulink, CNC Programming

### Experience

Dec 2016

Company Name

- Identified technological changes, key issues, trends, design and refined the vehicle definition.
- Illustrated vehicle design and highlighted major interior and exterior dimensions of the vehicle concept.
- Presented a technology plan on the above parameters.
- Simulation and Analysis of 1-2 Shift Processes of a 6-speed FWD AT, University of Michigan-Dearborn, March 2017.
- Established a mathematic model for the transmission-vehicle system consisting of general state variable equation, specific state variable equation for the 1st gear, 1-2 shift process and 2nd gear operation.
- Simulated the launch of the vehicle from rest in 1st gear, initiated 1-2 shift at a speed of 15 mph, and 2nd gear operation for 2 seconds with an open torque converter and a fixed throttle position using MATLAB/Simulink.
- Reduced torque overshoot by spark retarding, and careful calibration of the oncoming clutch.
- Further, torque hole was reduced to maximum extent with help of spark retard.
- Modelling of Vehicle cooling system, University of Michigan-Dearborn, November 2016.
- Built a Simulink model of vehicle cooling system consisting of four sub models namely, engine operation, air flowrate, coolant flowrate and heat transfer.
- Determined coolant flow rate, heat rejection from the engine, and engine outlet coolant temperature for different vehicle speeds by executing the simulation model.
- Computational Analysis of Hemispherical Radiating Fin, Visvesvaraya Technological University, April 2015.
- Derived heat transfer equations by using two-dimensional conduction equation in spherical coordinates and subjected the same to radiative boundary condition, with constant base temperature.
- Solved derived equations using Finite Difference Method and Gauss-Seidel iterations by writing a code in FORTRAN 95.
- Determined Heat transfer improvement as a function of thermal conductivity and emissivity, with and without irradiation.
- The hemispherical fin starts to radiate heat for thermal conductivity  $> 3 \text{ (W/mK)}$  and absorbs heat for thermal conductivity  $< 3 \text{ (W/mK)}$

Engineering Intern Jan 2016 to Jun 2016

Company Name 1/4 City

- Completed basic and advanced level of training from regional training office of Maruti Suzuki India Limited.
- Implemented 5S, Kaizen, Poka-yoke in servicing of automobiles.
- Overhauled Engines and Transmissions with assistance of technicians.
- Carried out tasks such as inspection and replacement of clutch, common rail, glow plugs, spark plugs, head gaskets, shims, tappets, brake pads, brake shoes, brake fluid, engine oil, coolant, EGR systems, VVT systems, engine filters, fuel filters, wheel bearings.
- Gained knowledge in working of CAN Bus systems.
- Assisted technicians in cylinder compression test, servicing of inter-coolers, suspension systems, brake systems.
- Operated SDT (Suzuki Diagnostic Tool) to inspect, analyze and eliminate errors caused by various sensors and actuators present in different vehicle systems.

Mechanical Engineering Intern Jul 2014

Company Name 1/4 City

- The main objective of the internship was to understand the different mechanisms and technical concepts involved in the end to end manufacturing of rail coaches and engines.
- The internship helped get a feel of industry environment.
- Witnessed various concepts such as welding, sheet metal works, CNC machine working etc.
- Benchmarking and Preliminary analysis (Mid-Size SUV), University of Michigan-Dearborn, September 2016.
- Collected Customer requirements from surveys, websites, magazine and, blogs.
- Conducted a benchmarking study of competitor vehicles with the reference selected vehicle.
- Developed preliminary specifications of the target vehicle.
- Developed Pugh Diagrams to determine how the target vehicle and benchmarked vehicles compare with the reference vehicle.
- QFD, requirement cascade and interface analysis for a selected vehicle system (Instrument Panel), University of Michigan-Dearborn, October 2016.
- Determined functional specifications through the application of the Quality Function Deployment (QFD) to a selected vehicle system.
- Cascaded vehicle attributes and sub-attributes requirements to vehicle system and its sub-system requirements.
- Developed interface diagram and interface matrix for the selected vehicle system included all major sub-systems.
- Identified and analyzed major trade-offs considered in designing the selected system to fit and work with other vehicle systems.
- Business Plan Development (Mid-Size SUV), University of Michigan-Dearborn, November 2016.
- Determined and developed various features, options, unique characteristics of vehicle systems and provided a brief description of the proposed vehicle.

- Determined the characteristics of anticipated customers and provided a brief description of market segment.
- Determined selling price and sales projection of the proposed vehicle.
- Developed Gantt chart and System Engineering 'V' model to show the vehicle program timings and various gateways.
- Determined costs, prepared revenue summary table, developed plots of curves containing life-cycle costs and revenues for the vehicle program
- Constructed a benchmarking table that included comparisons done between target vehicle and competitors and risks involved for the addition of new features.

#### Education and Training

Master of Science , Automotive Systems Engineering May 2018 University of Michigan i¼ City , State Automotive Systems Engineering 3.72

Bachelor of Engineering , Mechanical Engineering June 2015 Visvesvaraya Technological University i¼ City , India Mechanical Engineering 75.35

#### Certifications

Product Development, Systems Engineering, Automotive Powertrains, Vehicle Thermal Management, Strength of Materials, Design of Machine Elements, Fluid Mechanics, Heat Transfer, Thermodynamics

#### Skills

Ansys, AutoCAD, automobiles, Automotive, basic, Benchmarking, Business Plan Development, C, calibration, CATIA, CNC, concept, designing, dimensions, features, FORTRAN, functional, gateways, inspection, inspect, market, Materials, MATLAB, MS Office Suite, office, works, oil, Processes, Product Development, Programming, Quality, requirement, selling, sales, Simulation, surveys, Systems Engineering, System Engineering, transmission, unique, websites, welding

#### Additional Information

- HONORS AND ACTIVITIES \*Presented a technical seminar on "MOTOR VEHICLE WITH INSERTABLE FOUR WHEEL DRIVE", Visvesvaraya Technological University. \*Non-Resident Graduate Scholarship Recipient, Fall 2016 and Winter 2017 terms, University of Michigan-Dearborn. \*Top 10 in a class of 140 students at PES Institute of Technology South Campus, Visvesvaraya Technological University.