PERSONAL INFORMATION

Santhosh Babu Thoppe Natesh Bapu

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Sex Male | Date of birth 23 Dec 1989 | Nationality Indian

SUMMARY

Powertrain engineer with 4+ years of experience in calibration and testing of engines, with experience in development and validation of turbochargers.

WORK EXPERIENCE

23/07/2014–17/08/2015
(1 year 1 month)

Senior Engineer - Engineering Application
Robert BOSCH India Limited, Bangalore (India)

- Calibration of common-rail and conventional fuel systems of Diesel engines.
- Engine – Testing and calibration of engines on dynamometers at customer site.
- Vehicle – Cold start, speed governing, drivability, EATS emission calibration.
- Engine and vehicle data analysis, report generation and presentation to stake holders.
- Project Management –Timely execution of project within timeline, cross functional team member in Project teams.

06/06/2011–17/07/2014
(3 years 1 month)

Lead Engineer - Research and development
Turbo Energy Limited (JV BorgWarner turbo systems and TVS), Chennai (India)

- Product design (3D modelling and drafting), application- Diesel and CNG turbocharging systems.
- Vehicle trials - High altitude, Low Cycle Fatigue and High Cycle Fatigue trials.
- Product development, prototype building, Thermodynamic matching, meeting engine performance and emissions, Engine testing on dynamometers at customer site.

EDUCATION AND TRAINING

September 2015 – June 2016

Master of Science (BAC+5) in Powertrain engineering
IFP School (ENSPM), Rueil Malmaison, France

Engine technology (Technologies of fixed components, piston, mechanics, balancing and bearing of reciprocating engines, valve train, crankshaft and Conrod bearing), Engine performance and operating parameters, Thermodynamic modelling, Pollutant formation and control of Exhaust After treatment systems (SCR, Three-way catalyst, LNT, DOC, DPF), Powertrain control and calibration, Gasoline and Diesel Engine testing, Hybrid and electric powertrain controls, Automatic and Manual transmissions.

June 2007– May 2011

Bachelor of Engineering (BAC+4) in Mechanical Engineering
Anna University, Chennai (India)

Kinetics and Dynamics of machinery, Fluid Mechanics, Thermodynamics, Heat and Mass Transfer, Gas dynamics and Jet Propulsion, Finite Element Analysis, Numerical Methods

Final Project: Design of Lean Work station for a multi-product assembly line using NI-LabVIEW and CATIA-V5.

ACADEMIC PROJECTS

March 2016 – Present

Development of Conventional/Hybrid vehicle model for Volvo Group

- Developing a model for deciding new strategies in the Hybrid electric drivelines for optimizing battery capacity, motor sizing and fuel consumption reduction.
- Analysing different modes for parallel and series hybrid configuration for different duty cycles and the effect of CO2 reduction.

April 2016

Multi Cylinder Exhaust and Intake Analysis on GT-Power

- Effects of variation in the intake/exhaust dimensions, air-filter, resonator & valve timing on Noise & Performance are studied

April 2016

Longitudinal vehicle dynamics and sensitivity study on the transmission

- Vehicle dynamics calculation for a 1L displacement passenger application was carried out.
- Sensitivity analysis was done for Long, short and optimal gear box configuration along with start stop system.
- Fuel consumption reduction 0.5L/100 km was achieved by optimizing the above mentioned configurations.

March 2016

Hybrid vehicle Modelling and ECMS implementation in Simulink

- Basic structure of hybrid powertrain simulator with driving cycle, engine, battery, motor and EMS.
- Implementation of Equivalent Consumption Minimization Strategy(ECMS) to optimize total fuel consumption.

February 2016

Heat Transfer Modelling for Engine Application on AMESim

- Modelled the thermal interactions between combustion, piston, cylinder head and liner.
- Sensitivity analysis for different RPM, oil temperature and coolant temperature are studied.

November 2015

Powertrain Testing of Gasoline and Diesel Engines

- Gasoline engine testing (GDI Engine): Effects of SOI, Injection pressure, BMEP, VVT, Homogeneous and stratified consumption on BSFC and emissions optimization.
- Diesel Engine testing: Calibrated engine parameters like SOI, EGR, P-Rail and main injection phasing and Boost Pressure, to minimize the HC and CO emission.
- Vehicle Roller Test Bench: Result analysis from NEDC cycle to check emission levels for homologation
- Aerodynamics Test bench: Swirl, Tumble and permeability analysis of cylinder head.

November 2015

0D- Thermodynamic modelling parametric analysis for IC Engines using MATLAB

- Modelled and Simulated combustion (Two Zone model), heat loss through walls, mass transfer through valves and knock prediction on MATLAB

SKILL SET

Software Skills

- PRO-E, **CATIA V5**, **MATLAB, Simulink**, AMESIM, CHEMKIN, **GT-Power**, HOT (Hybrid Optimization Tool), **ETAS-INCA**, ICE2, ETAS-ASCMO, **AVL PUMA**, **AVL Concerto (post processing)**, Uniplot (Data analysis), CANape.

Languages

- **English** (Bilingual Proficiency), **German** (Limited working Proficiency), French (Limited Working Proficiency), Spanish (Elementary Proficiency), Tamil(Native), Sourashtra (Native), Hindi (Native).

Interest & Hobbies

- Horticulture, Tennis, Photography, Hiking/Trekking, cycling, Riding Motorcycles.

Driving License

- Indian driving license, International Driving Permit (licensed to drive motorcycles and light motor vehicles).