**OMKAR LAHURIKAR**

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**Powertrain Integration Engineer** featuring expertise in analysing and debugging controls system. Good functional understanding of engine and powertrain, experience working in cross functional teams. Passion for engine, powertrain and other automotive disruptive technologies.

**Technical Skills**

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| **Proficient** | **Knowledgeable** |
| Mathematical Modelling, After Treatment, CANOe, Matlab, Simulink, CAN, Diagnostic Applications, Rapid Prototyping with MotoHawk/Mototune | OBD, C, C++, INCA, GTPower |

**Education Michigan Technological University** (MTU), **Houghton, MI** **May 2013**

Master of Science in Mechanical Engineering

**Work Experience**

**Power-train Integration and Software Release Engineer**

**Fiat Chrysler Automobiles-**Auburn Hills MI **August 2013 to Present**

* Validated Engine Control Unit (ECU) software to insure the implementation of the requirements
* Resolved ECU system and component level issues using corporate diagnostic tools and CAN signals
* Supported vehicle level validation at all build phases
* Successfully released ECU Software/Calibrations to the Assembly Plants
* Co-ordinated with cross functional team members to successfully met project deadlines
* Recognised by manager for developing CANOe configuration, resulted in reduced testing time
* Led and developed automation of DVPR process using CANOe and Simulink, which improved productivity

**Research Experience**

**Development of One-Dimensional Diesel Particulate Filter Model in Matlab (MTU)** **Spring 2013**

* Researched working of Diesel Particulate Filter (DPF) and formulated numerical equations
* Debugged, verified and developed Mathematical model in Matlab
* Developed regeneration and control strategy of PM oxidation, resulted in oxidation temperature below critical temperature
* Obtained and analysed regeneration temperature data, and studied effects of temperature change
* Successfully validated results with existing lumped parameter model

**Project Experience**

**Single Zone Combustion Modelling of V6 3.5L Ford Eco-Boost Engine (MTU) Spring 2013**

* Obtained and processed pressure data for 300 cycles in Labview
* Modelled apparent heat release and cylinder volume change rate
* Computed IMEP and pumping work at different EGR percentage
* Calculated mass fraction burn for different EGR percentage
* Successfully validated combustion characteristics using wiebe function

**GT Power Project** **(MTU) Spring 2011**

* Studied effects of throttle position and spark timing on engine performance parameters
* Observed effects of equivalence ratio on power, fuel conversion efficiency, heat transfer and NOx
* Analysed effects of compression ratio on BMEP, thermal efficiency and burned gas fraction
* Acquired engine performance data and analyzed results using GT-Post

**SAE Engine Controls**

**Engine RPM controller using MotoHawk (LHP**) **June 2013**

* Designed and developed State Machine, which selects engine stall, crank and run mode in simulink
* Limited maximum and idle engine RPM by developing Max Gov and Min Gov limiter functions
* Resolved RPM under and over shooting problem by developing RPM set point manager
* Successfully verified and validated state machine in software in loop and on actual Cummins engine

**Control Strategy for Cummins Diesel Engine using VP-44 Fuel Pump Controller (LHP) July 2013**

* Designed and developed model based control system using rapid prototyping tools
* Acquired real time sensor signals and incorporated it in MotoHawk model
* Calibrated engine map which selects fuel per cylinder for engine RPM and pedal position
* Defined CAN messages and sent to fuel pump controller for fuel injection rate and injection timing of fuel pump
* Successfully ran Cummins engine by controlling fuel pump control module and lift pump

**Car blind spot detection system December 2015**

* Coded and debugged blind spot detection program in Arduino IDE and successfully flashed software in controller
* Assembled Radar sensor and Arduino controller and successfully tested on vehicle

**Continuously Variable Transmission (CVT) control using Hydraulic Control System Spring 2009**

* Designed and Manufactured variable diameter pulley, hydraulic control system and other components of CVT
* Obtained mechanical advantage from small and large hydraulic cylinder

**Activities**

* **Graduate Student Government Representative (MTU) Fall 2012**
* Elected Graduate Student Government Representative at Michigan Tech
* Hosted events like Meet & Greet and Launch & Learn programs
* **MTU Entrepreneur Club Member (MTU) Fall 2012**
* Participated in Bob Mark Elevator pitch competition
* Member of Hitchhiker's team