Manikanda Balaji Venkatesan

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Objective

Passionate Engineer with 4 years of professional experience in automotive field. Experience gained while working with controls and programming motivated me towards research in autonomous vehicle development from controls and perception perspective. I am excited to be part of future mobility development that amalgamates traditional automotive engineering with the latest technological trends.

Academic Performance

Course	Institution	Year of Passing	Score
MS Automotive Engineering	Clemson University	May 2021	3.91/4
BE Mechanical Engineering	SSN College of Engineering	May 2015	8.23/10
XII Standard	St. John's MHSS	May 2011	93.58/100
X Standard	Amrita Vidhyalayam	May 2009	92.6/100

Software Skills

Design & Drafting – Pro/E, Solidworks

Control & Calibration – INCA, Motohawk

Analysis – Concerto, Uniplot, Minitab, ABAQUS, ANSYS

Programming – C, MATLAB, Python

Soft skills

Time Management | Integrity | Effective Communicator | Professional | Organizer

Adaptable | Problem Solving Skills | Team Player | Multitasker | Interpersonal Skills

Undergraduate

SSN College of Engineering – Bachelors in Mechanical Engineering (August 2011 – May 2015)

- Research on Numerical & Experimental Crashworthiness determination of extruded tube sections that can be implemented in Automotive bumpers. A paper titled "Numerical and Experimental Crashworthiness Determination of Aluminum Tube Sections" was presented at International Mechanical Engineering Congress, at NIT Trichy and same was published in International Journal of Applied Mechanics and Materials, p1130, (Vol. 592-594)
- Layout Modifications and Effective Part Movement Management for Improving Material Handling system and better utilization of plant facility in Body Shop at Renault Nissan India Private Limited to improve 5s in body shop.

- Development of Mathematical model to design a heat exchanger to utilize heat of condensation in consumer refrigerators
- Organizer of Truss Masters event in College Technical Symposium for two years
- Suspension team lead for our college Mach Racing Team for participation in SAE SUPRA India
- Joint Secretary of SAE India SSN Collegiate Club
- Received Award of Excellence from Department of Mechanical Engineering for the year 2014-2015

Professional Experience

Ashok Leyland (July 2015-July 2019) – Deputy Manager, Control Systems, Engine R&D

- Executed Lean Six Sigma(LSS) project to reduce warranty costs incurred due to field failure of turbochargers.
- Built Controller Area Network (CAN) software stack in embedded controller for inter ECU communication.
- Development of PID based closed loop control system for NOx (oxides of nitrogen) reduction ,in SCR (selective catalytic reduction) system to meet Bharat Stage 6 emission norms.
- Development of feed forward algorithm in the form of SCR plant model
- Created Control algorithm for actuation of solenoid based Diesel Exhaust Fluid (DEF) pump with a throughput error of 2 % validated with various duty cycles
- Integration of control logic, sensors(NOx sensor , temperature, pressure sensors,urea quality and level sensor) , actuator (DEF pump) in a rapid prototype controller and calibrate system in engine test bench to functionally achieve BS 6 emission norms.
- Volunteered to teach school children as part of organization's Corporate Social Responsibility team.
- Recognized as Young Talent during the FY 2018-2019

Graduate Studies

Clemson University – Master of Science in Automotive Engineering (Aug 2019 – May 2021)

Courses Completed:
AuE 8350 Automotive Electronics
AuE 8800 Automotive Business Concept
AuE 8810 Automotive Systems Overview
AuE 8930 High Performance Computing for Vehicle Autonomy
On Going Courses:
AuE 8500 Automotive Stability & Safety systems
AuE 8820 Automotive System Integration
AuE 8930 Autonomy: Science & Systems
AuE 8810 Motion Planning
Academic Projects

- Developing and implementing software stack for Adaptive Cruise Control and Lane Keeping Assist for RC car using ultrasonic sensor and Adruino control board.
- Control Algorithm for lane determination and maintenance on roads without lanes using RGB camera. Developed control software was evaluated in TASS Prescan.