Dinesh Kundumani Krishnamoorthy

Actively seeking for employment opportunities from November 2019.

Career Summary

- Competent Professional with an industrial experience of ten years - seven years in Automotive and three years in Aerospace domain
- Proficient in development of Battery (electrical and thermal), PMSM and vehicle models, and Real Time Implementation in dSPACE SCALEXIO HIL Simulations. Experienced in FPGA implementation of Motor and Inverter model.
- Skilled in model development of battery electro thermal model, Heating and cooling system, thermal management controls and correlation with battery charging test logs.
- Experienced in fuel economy and performance analysis simulations including WLTP and RDE drive cycles. Tool development for test data correlation analysis.
- Three years of experience as a design engineer for helicopter power systems.

Education

2010–2012 **Master of Technology, Control Systems Engineering**, *Indian Institute of Technology*, Kharagpur, First Class Honours.

2002–2006 **Bachelor of Engineering, Electrical and Electronics Engineering**, *Thiagarajar College of Engineering*, Madurai, First Class Honours.

Technical skills

Basic CAN/LIN protocols, ISO26262 Functional Safety, Carmaker, CANoe, C, Python.

Intermediate dSPACE Real Time Implementation, FPGA Implementation, XSG and FPGA blocksets, dSPACE - Configuration and Control desk. MS Excel.

Advanced Matlab, Simulink, Stateflow, Simscape.

Experience

HIL simulation, Battery and Vehicle modelling.

2019 **Dyson Research and Development**,
Advanced Simulation Engineer -(Jan 2019-Present).
Detailed Responsibilities:

- Setting up and Configuring dSPACE HIL simulation test rig for vehicle controller testing.
- HIL simulation with MicroAutoBox and Vehicle controller hardware.
- FPGA implementation (DS2655 Base board Kinetex -7 410T) of PMSM and inverter model using XSG and FPGA blocksets.
- Simulation of CAN and LIN in dSPACE configuration.
- MIL and SIL simulation of vehicle controller.
- Development of Battery (electrical and thermal) model, PMSM model and vehicle model for HIL simulation.
- Development of vehicle controller interface model; Integration of BMS and Motor controller.
- Intergration and Co-Simulation of Carmaker vehicle dynamics model with Matlab based powertrain model.

11, Cooper fields, Swindon – Wiltshire, SN25 4YT.
(+44)-7733781749 • *dinesh.rupa@gmail.com*

2015-2018 **Jaguar Land Rover (Affluent Technology Limited)**,
CAE Analyst and Simulation Engineer (May 2015-Dec 2018).
Detailed Responsibilities:

BEV battery charging model development and analysis

- Developed battery electro-thermal model, battery heating and cooling systems, integration of vehicle supervisory controls and thermal management strategy.
- Performed extensive analysis of battery charging data logs, simulated the test scenarios and correlated with test measurements for necessary model improvements.
- Estimation of battery charging time and charge efficiency for different power source and boundary conditions.
- Carried out study of integration of battery thermal behavior during battery discharge and regeneration.

HIL support

- Development of vehicle plant model and built interface for HIL simulation.
- Supported model development and configuration for HIL simulations.
- Integration of BMS in plant model for MIL simulation.

Simulation analysis (RDE and WLTP)

- Developed new driver model for RDE route simulations which includes real time traffic scenarios such as traffic signals, roundabouts, junctions and traffic delays.
- Simulation and correlation of fuel economy and performance using new driver model and comparison with the test logs.
- Performed extensive study of identifying drive styles of real world driving test logs based on vehicle speed, acceleration and braking.
- Identified differences between current EU legislation and WLTP regulations test procedure, drive cycle to upgrade simulation model for fuel economy and emissions prediction for JLR vehicles.
- Carried out extensive simulations using Matlab-Simulink and sensitivity studies with various drivetrain configurations to evaluate fuel economy for WLTP and RDE cycles.

2012–2015 **General Motors Technical Center**,
Hybrid and Electrification Architecture Engineer,Bangalore, India. Aug 2012-May 2015.
Detailed Responsibilities:

- Optimization of Battery Electric Vehicle drive unit design for matching vehicle FE and performances to vehicle technical specification. Assessment of FE and performance impact for driveline disconnect.
- Fuel economy estimation for hybrid and electric vehicles and analyzing the impact of FE for changes in various subsystems.
- Mathematical model development support for Hybrid vehicles and correlation of test data for model improvements.

2007–2010 **Hindustan Aeronautics Limited, Bangalore, India**,
Design Engineer, Jun 2007 – July 2010.
Detailed responsibilities:

- Designed, developed and tested the power distribution units for helicopters. Prepared the design specifications based on load estimation for the components such as battery, DC machine, alternator, Inverter.
- Carried out electrical load analysis and load management of various helicopters under all adverse operating conditions during flight and at ground operations.

Languages

Proficient	English	
Fluent	Tamil	*With Native Accent*
Intermediate	Sourashtra, Malayalam	

References shall be provided upon request.

11, Cooper fields, Swindon – Wiltshire, SN25 4YT.
(+44)-7733781749 • *dinesh.rupa@gmail.com*