Ragu Boovarahavan

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PROFILE SUMMARY

A contemporary engineer with experience on automotive technologies, having team oriented style of technical skills, management & knowledge to achieve sustainable solutions/goals that promotes the team, organization and personal development.

SKILLS & EXPERTISE

Modelling & Simulation
MATLAB
Simulink
State flow
Simscape
Altair Activate

Wiring Harness Design
Catia V5

Programming & Tools
C, Python, Arduino
Power-BI
MS Office

Technical & Industrial
EV Technologies
Embedded Systems
DVP Testing
NPD Process
Testing Standards
IATF Audit

Interpersonal
Problem solving
Team management
Adaptable & Flexible
Time management
Learning innovations

PROFESSIONAL EXPERIENCE

InGo Electric Pvt Ltd, Bangalore, India
Electrical Design Engineer **July 2023 - Present**

Modelling & Simulation

- Developed a **1D model of E-Powertrain** components in a model based system engineering using various various drive cycles as input in MATLAB & Altair Activate.
- Simulated an **e-CVT drivetrain** for an electric motor application including component selection.
- Developing techniques to make the motor running at the **most efficient points** and required less capacity of the battery.
- Developing battery module for predicting real world drive **performance and range of EV**.
- Collaborate with a cross functional team to ensure the powertrain meets all system requirements including **vehicle performance, emission and safety**.
- Developed methods in simulation for **sizing, design, development and optimization** for all the e-powertrain components.

Design:

- Electrical harness design of different projects using CATIA V5 and **reduced 10% cost** of the previous version harnesses.
- Designed & developed various testing equipment with loggers to acquire data for simulations & design optimization which **reduced the testing & analysis time by 30%**.
- Developed **in-house electronic circuits and boards** for telematics & power conversions.

Testing & Others:

- **Led a team of technicians and engineers** to support testing activities and achieve project goals.
- Developed & executed **testing plans** for vehicle systems, including powertrain, chassis and safety.
- Conducted **root cause analysis** and trouble-shooting for product defects and failures.
- **Benchmarked** electric vehicle components and provided design inputs.
- Performed **data analysis and data visualization** from test reports using Power-BI and identified failure modes for next versions at an early stage.
- **Vendor relationship & management** of all the powertrain & electrical components.

InGo Electric Pvt Ltd, Bangalore, India
Intern **Jan 2023 - July 2023**

- Developed testing equipment & loggers for the field test vehicles to log electrical parameters, vehicle speed, acceleration & distance which led **reduced testing expenses by 20%**.
- Assisted in **Functional testing & validation & NPD** processes.
- **Cost-cutting analysis and reduced cost by 5%** of electrical and electronics components .
- Collaborated with design and manufacturing teams to ensure product quality and reliability.
- Assisted in **Production & Quality Inspections.**
- Documented **Standard Operating Procedure (SOP)** for Vehicle assembly as per IATF Standards**.**

Mechatron Motors LLP, Coimbatore, India
Chief Technical Officer **May 2021 - Dec 2022**

- Own **student startup unit** with 12 members from automotive competitions background.
- Raised an **investment of 2 Lakh INR** with our products portfolio.
- Handled powertrain modelling & simulation to demonstrate to management & investors.
- Designed & prototyped a Hybrid electric conversion kit for old ICE Vehicles.
- Designed & prototyped an Instrument Cluster for Electric Vehicles with data management.
- Handled functional Testing & Validation.
- Market analysis, pitching & financial management.

PROJECTS

Electric Vehicle - Design & Development

- An electric vehicle is designed and developed from scratch for inter-college racing conducted by various organizations (Hero Electric & ISIE, SAE, AMT MotoCorp, Imagine to Innovate).
- A Mathematical modelling of e-powertrain using MATLAB is developed for components sizing which effectively promotes to win the championship of 1 Lakh price.

Instrument Cluster for EVs

- A low cost instrument cluster developed using Arduino, Raspberry Pi with MATLAB Think-Speak Cloud space to analyze the parameters.
- This is fully funded by the University under the Research Scholar Scheme of 25,000/-

Controller for DC-DC Converter

- Developed a fuzzy logic controller for DC-DC converter for low power applications by varying the duty cycles.
- This is demonstrated by the using a copper plate transferring heat to electricity in an IC Engine with a controller to charge the battery.

EDUCATION

PG Graduate Program - Electric Vehicle Design & Development **Feb 24 - Present**
Skill Lync (Digital Edu-tech platform), India

Master of Engineering - Power Systems Engineering **2021 - 2023**
Sri Ramakrishna Institute of Technology, Coimbatore, India
CGPA - 8.4

Bachelor of Engineering - Electrical & Electronics Engineering **2017 - 2021**
Sri Ramakrishna Institute of Technology, Coimbatore, India
CGPA - 7.6