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RaviTejaLV

Date of birth:10/11/1997 **Nationality:**Indian **Gender:**Male

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ABOUT ME

Electrical Engineer with a strong focus on Power Electronics and Renewable Energy Systems. Experienced in hardware design for power electronics applications, testing and evaluation of power converters, and proficient in applying Machine Learning and Deep Learning techniques for predicting system reliability and state of health. Passionate about innovative solutions that enhance system performance and sustainability.

WORK EXPERIENCE

26/06/2023 – CURRENT Singapore, Singapore

ELECTRONICS DESIGN ENGINEER : BORGWARNER

Software:

1. Simulated the characterization of SiC MOSFETs using SaberRD and LTspice.
2. Applied Design for Six Sigma (DFSS) methodology to Clamped Inductive Switching (CIS) simulations, minimizing oscillations.
3. Utilized machine learning regression techniques to predict oscillations in power electronic systems.
4. Modified schematics using Mentor Graphics for SEPIC, Flyback , and Half-bridge converter designs.

Hardware:

1. Conducted double pulse and short circuit tests for SiC device characterization.
2. Tested and evaluated power converter circuits.
3. Modified the active discharge circuit for discharging through motor windings, reducing system costs.
4. Characterized IGBT and diode performance at tri-temperature conditions.
5. Performed EMC validation based on the CISPR 25 standard on motor-inverter modules at the HCT lab in South Korea.

18/07/2022 – 16/06/2023 Pune, India

ELECTRICAL ENGINEER : EATON

1. Prognosis and Health Monitoring of Metal Oxide Varistors (MOV) to enhance system reliability.
2. Arcless Circuit Breaker Design using MOV to prolong the life of the circuit breaker.
3. Designed Gate Driver Circuits for IGBTs to facilitate pulsed voltage testing of MOVs.
4. Programmed TI C2000 Microcontroller, utilizing PWM, ADC, and DAC peripherals.
5. Engaged in High-Temperature Power Electronics development, including Pugh Matrix analysis, component selection, and circuit simulations in LTspice.
6. Conducted Pyomo Optimization on Eaton's Pune Microgrid to establish peak shave limits for energy management.
7. Generated Electric Vehicle (EV) Load Profiles using probability distributions and used Time Series to forecast the EV load demand.
8. Implemented Motor Fault Detection using K-Nearest Neighbors (KNN) algorithm as a part of research proposal.

01/06/2021 – 05/08/2021 Bangalore, India

RESEARCH INTERN : CATERPILLAR

1. Worked on predicting State Of Health (SOH) of lithium ion battery using Electrical equivalent circuit model.

2. The model predicts number of cycles a given cell takes to reach its eighty percent SOH. The simulation was performed in MATLAB/SIMULINK.

17/06/2019 – 17/08/2020 Bangalore, India

Electrical Engineer : ExxonMobil

1. Managed Obsolescence Workflow for Canada-based assets, collaborating with vendors like ABB, Siemens, and GE to develop obsolescence plans for various equipment classes.
2. Worked on Equipment Validation, Transformer Oil Analysis, and Battery System Data Analysis

workflows.

3. Designed Single Line Diagrams for a drilling site in ETAP; conducted load flow studies, adjusted transformer tap ratios, and performed short circuit analysis to assess fault levels at different buses.
4. Developed case studies for electrical contingencies and presented on Grounding Hazards in portable generators.
5. Compared Arc Flash Study Results for two sites in line with NFPA 70E and IEEE 1584 standards.

EDUCATION AND TRAINING

02/10/2020 – 07/07/2022

MASTER OF TECHNOLOGY Indian Institute of Science - Bengaluru

Power Electronic Converters and Applications, Digital system design with FPGA, Design for internet of things, Computer control of power systems, Electric drives, Embedded system design for Power Applications, Electromagnetism
Software Skills: MATLAB/SIMULINK, Kicad, Python/C++, Ltspice

Final grade 8.3 **Thesis** Unified physics-based model for State of health estimation of Lithium-ion batteries

02/08/2015 – 31/05/2019

BACHELOR OF TECHNOLOGY National Institute of Technology - Warangal

Electrical Machines, Power systems, Basic Power Electronics, Mathematics for Electrical Engineering, Electrical machines lab, Electronics circuit design and lab.

Final grade 7.83

LANGUAGE SKILLS

Mother tongue(s): **TELUGU**

Other language(s): **ENGLISH** | **HINDI**

PUBLICATIONS

- **Raviteja L V, Gurunath Gurrala "A Review of Lithium-ion Battery Physics-based Models"**

This paper reviews the physics-based models of lithium-ion batteries in a meticulous manner. The paper was presented at the PES General Meeting 2023 conference.