

Renuka V

Working as Sr Engineer
Viccacia Global Technologies
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Career Objectives

Looking forward to working with an organization which provides me an ample opportunity to explore my technical skills towards organization goals and be an ultimate resource to the organization.

Educational Qualifications

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|---|------------------|------------------|
| ➤ Master of Technology in Power Electronics control and drives | CGPA-9.1 | 2020-2022 |
| Siddaganga Institute of Technology, Tumkur, Karnataka, India | | |
| ➤ Bachelor of Technology in Electrical and Engineering | CGPA-8.01 | 2015-2019 |
| Basaveshwar engineering college, Bagalkot, Karnataka, India | | |

Major Projects

- **MTech Project:**
 - **Project Title: Mathematical modelling of 8/6 switched reluctance motor with static magnetic characteristics obtained from finite element method:**

The static magnetic characteristics obtained from JMAG software, and these characteristics are incorporated in simulation model of switched reluctance motor speed control based on current control. Closed loop speed control can be obtained.

Work Experience-

Company: Viccacia Global Technologies Pvt Ltd

Experience: 20 March 2023 to till date.

Roles and Responsibilities

- Design and develop PCBA as per internal or external Product as well as customer requirement.
- Design and develop new products with specifications for own brand or otherwise as per product assigned.
- Develop test setup for products developed.
- Component engineering
- Costing of BOM.
- Co-ordination with our partners for product development.
- Creation of design and manufacturing documentation
- Learn customer requirements and convert to design
- Keep updated on the electronics devices.
- Develop Microcontroller programming capabilities.

Technical Skills

- **Software Skills:**

Programming Language: Embedded C, Linux Shell Script.
Technologies/Tools: Linux, MPLAB IDE, PICSIM lab simulator, STM32 Cube IDE, Renesas.
- **Applications:** MATLAB SIMULINK, JMAG.
- **Equipment Handled:** Oscilloscopes, Function generators, Power analyzer, DC Supply.

- **Image Steganography: Embedded C - File operations, Make files, Command line arguments:**
 - The objective was to send a secret text file encoded inside an image of bmp file format.
 - Encoded the length of the secret text and then encoded the data into the LSB of the image bytes.
 - The decoding process involves decoding the length and then decoding the text bit by bit. The final output is the secret text after decoding. Understanding of pixels and header of image file by doing literature study Transforming the embedded information to the destination without changing the properties of the original image.
- **Obstacle avoidance vehicle | STM32 (MCU), STM32 Cube Ide:**
 - Made a working Prototype of Obstacle Avoidance Vehicle Used STM32 F401RE Model as a Microcontroller.
 - Used Ultra sonic Sensors to Measure the Obstacle Distance and used Motor Driver to run the motor.
 - Wrote the C Program to Receive Data from the sensor and to generate delay and calculate the distance and send signal to motor shield to drive motor.
- **Car Black Box: Embedded C, PIC micro controller and schematics, Picsim lab simulator, I2C Protocol:**
 - Black Box Commonly associated with airplanes for catastrophe analysis. Also known as event data recorder (EDR) or Accident data recorder (ADR). Can be installed in automobiles for proactive monitoring and maintenance.
 - Black Box logs critical activities in the car and takes appropriate actions for rash driving. solution aims to keep track of how the vehicle is being used, handled and control the efficiency of the vehicle.
 - Log critical events like gear shifts, current speed, engine temperature, fuel consumption, and trip distance.
 - System enables password-based access to view or download logs from the external EEPROM.
- **SMPS: 560W**
 - Developed a high efficiency 560W SMPS designed for industrial applications, focusing on optimizing power conversion and minimizing energy losses
 - Implemented controllers for power factor correction (PFC) and LLC resonant converter stages, respectively.
 - Used a PI controller to regulate the output voltage and current. The PI controller adjusts the duty cycle of the switching Mosfets to maintain a stable output, compensating for any disturbances or load changes.
 - Switched mode power supply with multiple outputs used for ATM Application. It gives multiple outputs such as 24V @18A, 24V@5A ,24V @1A.
- **Mobile(20W) and Laptop(65W) PD Charger:**
 - Power delivery is done based on load demand. In this power integration controller is used. PD Charger gives multiple outputs such as 5V @3A ,9V@3A,15V@3A, 20V@3.25A.
- **DC – DC Converter:10W,18W**
 - It is used in solar applications. This converter gives 5V @2A output.
 - Selected high-efficiency components, including inductors, capacitors, and switching transistors, to minimize energy losses.
 - Performed extensive testing to ensure reliability and efficiency