**Susan Thambi**

**PROFILE**

Strong academic achiever with an excellent track record of past performance in automotive diagnostic testing. Results-driven success in project planning, research and electronics domain. Keen interest in emerging technologies in the automotive industry, AI and embedded systems. Proven problem solver and analytical thinker, consistently delivering innovative solutions.

**EDUCATION**

* **M.Tech Power and Energy**

**CGPA – 9.61 / 10 2019-2023**

Amrita Vishwa Vidyapeetham

* **B.Tech Electronics and Communication Engineering**

**CGPA – 9.35 / 10**

* **Class 12** – 86.8% **2019**

Institution:

* **Class 10** – 96.6% **2017**

Institution:

**TECHNICAL INTERESTS**

Embedded Systems, Microcontrollers, EVs, Power Electronics, Automotive Electronics, ADAS, Sustainability, AI

**PROJECTS**

**Adaptive Headlight System for Better Visibility**

An adaptive headlight system that senses obstacles in a short range and communicates back to the module with an Atmega16 microprocessor, distance measuring sensors such as an ultrasonic sensor, and headlight brightness and intensity is proposed. This will facilitate the design of an intelligent light-adjusting system to reduce crashes by alerting drivers to nighttime objects or blind spots.

**Temperature Controller for a room using UART**

The project idea is based on the sensing of temperature in a room using a temperature sensor and controlling it via any appropriate electronic devices such as fan or heater units. The ADC capabilities are brought in, and the control is done via a microcontroller (ATMega16).

Modeling and closed loop speed control of **Permanent Magnet DC motor**

The Permanent magnet DC motor was implemented in open loop and closed loop speed control design for no load and load condition using Simulink in Matlab. The PID controller employing feedback is incorporated in the simulation for stability and accuracy when the load is provided for the normalized output.

**BLDC motor control technique**

In the project, switching logic with a PWM drive circuit and a PWM inverter are used to control the speed of a BLDC motor with Hall effect sensors. With feedback from the rotor speed output, the PID controller implies the capability to modulate the speed, and the motor gradually speeds up to the value that was set.

**Improved high efficient buck converter for EV battery charging**

This project proposes a PV array charging batteries with buck and MPPT control for electric vehicles and other uses. The dual buck converter improves efficiency and reduces switching losses. The modified perturb & observe (MPO) MPPT algorithm gives the dual buck converter a sufficient duty cycle.

**Open loop and Closed loop SEPIC converter**

The purpose of this project was to design and optimize a SEPIC dc/dc converter (Single Ended Primary Inductance Converter). The SEPIC converter allows a range of dc voltage to be adjusted to maintain a constant voltage output.

**Fault Analysis using Phasor Measurement Unit Method**

This project analyses grid faults utilizing the PLL measurement block of PMUs and identifies the effect and intensity by deploying PMUs at different grid system sites. Phasor measuring units (PMUs) provided valuable data on fault recovery time and grid protection system status.

**Predicting PV Power Generation using SVM Regression**

This project proposed using SVM to develop a regression model that can predict PV generation one hour ahead. Weather-based machine learning can predict power output.

**TECHNICAL SKILLS**

CAN, UDS Protocol, MATLAB/Simulink, Proteus, PSCAD, CANoe, MPLABX, C++, Python, MS Office

**WORK EXPERIENCE**

**Project Trainee,** Bosch Global Software Technologies Pvt Ltd, ECU Verification and Validation of FOTA in the Automotive Sector with ISO 14229, ISO 11898, and ISO/IEC/IEEE 8802-3

**•**Module handling for testing, and validation.

•System and regression testing, handling modules in FOTA testing independently.

•Modules like self-update CONFD, Inventory, and Menupackage.

•Coordinated with developers and debugging.

•Requirement analysis according to system specifications, and defined test case scenarios.

•Detected bug issues with the root cause, filed defects and progress reports

•Familiarity with hardware setup for FOTA, ECU flashing, and Gateway ECU, CANoe tool.

**Associate Systems Engineer ,** Thisru Robotics India Private Limited (Startup)

•Developed test plans, test design specifications, and test scripts for various test scenarios.•Participated in the development of rollout strategy and execution of pilot programs for new or enhanced product features to client teams.

•Collaborated closely with developers and potential stakeholders to meet client requirement elicitations.

•Procured a basic knowledge in Cloud Computing, Microcontrollers(ATmega, PIC), Motors, and other PCB components while working on several client projects.

**IT Administrator, Karunya Hospital**

•Analysis and testing of hospital management software application.

• Defined, and managed requirements for a significant section of this application.

• Managed projects, systems conversions, and monitoring of applications.

•Implementation of coding reviews that detected programming errors early in the development process.

•Gathered and assessed needs from internal units; created custom solutions to resolve issues

•Systems Security & Disaster Recovery Planning.

•Technical Writing (Manuals/System Specs)

**Associate Engineer**, Litmus7 Systems Consulting Ltd

Worked in C, C++, and Java on various e-Commerce projects.

•Handled Object-Oriented Design, ATG platform, code testing and debugging.

•Designing, testing, and troubleshooting codes, deployment, and testing e-commerce applications.

•Worked on e-commerce team projects for retailers like Sephora and Walmart.

**LANGUAGES**

English, Tamil, Malayalam, Hindi

**EXTRA CURRICULAR ACTIVITIES**

Event Coordination member of Thisru Robotics Webinars on several platforms.

•Organized several cultural and festival activities at the workplaces.

•Volunteered as a teaching assistant for an NGO, providing education and support to underprivileged children.

•Event Coordinator of ‘ONYX 4.0’, an Inter College Technical Fest conducted by CEP, POONJAR.

•Student Coordinator of “ESA” (Electronics Students Association) in the College of Engineering, Poonjar, and active member of IEEE.