Daksh Kakadia

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EXPERIENCE

Glide Technology

Associate Engineer *Jan 2024 - present*

EVSE Communication and Firmware Management System

- Developed and implemented communication protocols between two microcontrollers using ESP32-based development kit, ensuring seamless data exchange and system operation.
- Implemented Bluetooth Low Energy (BLE) communication to enable secure interaction between the embedded system and a mobile application for remote monitoring and control.
- Designed and executed secure Over-the-Air (OTA) firmware updates via BLE, allowing updates for both the ESP32 and a secondary microcontroller over UART. Ensured robust security measures during the OTA process.
- Integrated an LTE module with ESP32 over UART, implementing the Open Charge Point Protocol (OCPP) for network communication and remote management of the EVSE (Electric Vehicle Supply Equipment) system.
- Interfaced various peripherals using SPI and I2C communication protocols, expanding the system's functionality and enabling additional hardware support.
- Developed and deployed the system within the ESP-IDF (IoT Development Framework) environment, leveraging Real-Time Operating System (RTOS) to ensure reliable, deterministic performance in embedded applications.

Other Activities

- Received comprehensive training in embedded software development, focusing on STM micro-controllers and ESP32 controller platforms.
- Developed proficiency in coding for various communication protocols, including UART, SPI, and I2C, through practical application and project work.
- Hands-on experience in Bluetooth Low Energy (BLE) technology, contributing to projects involving BLE-enabled devices.

Space Application Center, ISRO

Intern *Aug 2023 - Oct 2023*

Stepper Motor Controller

- Generic Motor Controller for stepper motor for speed control using ARM Cortex-M7 Micro-controller. Implemented Full-stepping, Half- stepping using a power driver.
- Successfully implemented and tested full-stepping and half-stepping control algorithms, ensuring reliable and precise motor control and Achieved smooth speed control with effective acceleration and deceleration profiles, enhancing the overall performance of the stepper motor.

PROJECTS

Line follower and Maze Solving Robot

- Robot that follows a marked path and also able to avoid object collision with the help of Arduino and IR sensor. Robot able to solve maze by using LSRB algorithm and detects the path using five IR sensors.

IoT based Home automation using NodeMCU and Blynk App

- A simple home automation system built using the ESP32 micro-controller and the Blynk IoT platform, the ESP32 is used to control a relay module, which can be used to switch on and off various home appliances.

SUMMARY

A motivated and Embedded software engineer with experience in designing and implementing software solutions for embedded systems. Seeking to leverage my expertise and contribute to a dynamic team in developing cutting-edge embedded solutions.

SKILLS

Languages	Python, C
Micro-controllers	ESP32, STM32, Arduino, Dialog
Frameworks	FreeRTOS, ESP-IDF, Arduino
Protocols	UART, SPI, I2C, BLE
IDEs	Espressif, STM32Cube, SmartSnippet Studio

EDUCATION

Gujarat Technological University

B.E. - E.C. 2020 - 2024

CGPA: 9.12/10.00

EXTRA-CURRICULAR

Tech-Fest Coordinator-Core Team

- Coordinated Registration and Campaigning team of 50+ students

Main Coordinator-Ardubotics Workshop

- Coordinated College level workshop on Robotics using Arduino

LANGUAGES

- English (Fluent)

INTERESTS

- IoT & Robotics
- Exploring new Tech
- Photography