MUKESHWARAN A

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SUMMARY

A highly motivated Electrical & Electronics Engineering graduate with a strong foundation in embedded systems, microcontrollers, and IoT technology. Experienced in designing and implementing innovative hardware and software solutions, with a keen interest in cutting-edge engineering technologies. Seeking a challenging engineering position in a dynamic company that fosters critical thinking, innovation, and career growth. Equipped with hands-on experience in embedded C, sensor interfacing, communication protocols, and cloud-based IoT solutions. Passionate about leveraging technical expertise to contribute to advanced engineering projects.

EDUCATION

SRI SAIRAM ENGINEERING COLLEGE 05/2024
BE-EEE
GPA:8.40

TI MATRICULATION HIGHER SECONDARY SCHOOL 01/2020
HSC
PERCENTAGE:70%

TI MATRICULATION HIGHER SECONDARY SCHOOL 05/2024
SSLC
PERCENTAGE:83.6%

INTERNSHIP

GH INDUCTION PVT LTD|STUDENT INTERN
August 2021 - September 2021

- Gained hands-on experience in induction heating technology, assisting in project development, testing systems, documenting processes, and collaborating with engineering teams to optimize heating solutions.

PLACKA INSTRUMENTS PVT LTD
June 2023 - July 2023

- Gained practical experience in instrumentation and control systems, assisting with the design and calibration of measurement devices, conducting performance tests, and collaborating with engineers to enhance product functionality and reliability.

ARCLIGHT STRUCTURAL ENGINEERING
February 2024- March 2024

- Gained hands-on experience in electrical wiring and systems integration within structural engineering projects. Assisted in the design, installation, and testing of wiring systems, ensuring compliance with safety standards and enhancing overall project efficiency.

PROJECTS

BATTERY MANAGEMENT SYSTEM USING IOT
December 2022

- Developed an innovative Battery Management System leveraging IoT technology to monitor battery health, optimize charging cycles, and ensure safety. Implemented real-time data collection and analysis for voltage, temperature, and charge status, facilitating proactive management of battery performance and longevity. Enabled remote monitoring and alerts through cloud integration, enhancing user accessibility and operational efficiency.

GAS LEAKAGE DETECTION : RISKWATCH GUARDIAN SYSTEM
April 2024

- Developed a Gas Leakage Detection Risk Watch Guardian System designed to enhance safety in environments prone to gas leaks. Utilized advanced sensors to continuously monitor gas levels and detect leaks in real time. Integrated an alert system to notify users via SMS and email, ensuring prompt response to potential hazards. The system features data logging for analysis and compliance, enabling proactive risk management and enhanced safety protocols.

SMART VEHICLE HEALTH MONITORING & CONTROL SYSTEM
August 2024

- Developed a Smart Vehicle Health Monitoring & Control System that utilizes IoT technology to track and analyze vehicle performance metrics in real-time. Integrated sensors to monitor critical parameters such as engine temperature, oil pressure, and battery health, enabling predictive maintenance and reducing downtime. Implemented a user-friendly interface for remote monitoring and alerts, allowing vehicle owners to ensure optimal performance and safety.

EXPERIENCE

EMBEDDED COURSE,05/2024-10/2024
WIZTECH AUTOMATION,CHENNAI
In my Postgraduate Diploma course in Embedded Systems, I covered a wide range of topics, both theoretical and practical.

1. Embedded C Programming
- Learning the working of embedded C compilers, program structure, and data types.
- Techniques like bit masking, program debugging, and embedded system-specific programming.

2. Electronics Fundamentals - Understanding basic electronic components such as resistors, capacitors, transistors, diodes.

3.Microcontrollers -

- PIC Microcontroller (PIC16F) - Features, datasheet analysis, GPIO, timers, ADC, and sensor interfacing. - Peripheral interfacing and communication protocols like UART and SPI.
- AVR Microcontroller (ATMEGA16/32) - Detailed architecture analysis, timer & counter use, EEPROM, motor interfacing, and communication protocols.
- Arduino - Basics of Arduino programming, GPIO interfacing, sensor and motor interfacing, and communication with PC via Bluetooth (HC-05).
- ARM7 LPC2148 & STM32 - ARM architecture, memory mapping, ADC, PWM, RTC, and debugging with tools like Keil.

4. Sensor Interfacing - Working with different sensors: PIR, temperature, ultrasonic, LDR, and more. - Concepts like sampling, quantization, and calibration.

5. Communication Protocols: UART, USART, I2C, SPI, CAN, USB, and Ethernet.

6. Raspberry Pi and IoT - Introduction to Raspberry Pi, programming with Python, and sensor interfacing.acing.
-IoT (ESP32/ESP8266): Digital/analog sensor interfacing, IoT protocols, Wi-Fi, and cloud platforms like ThingSpeak.

7. Projects - Hands-on projects like password-based locker systems, smart traffic management, automatic door systems, and IoT-enabled applications.

SKILLS

- **Programming Languages**: C/C++, Python, Assembly Language(Intermediate), MATLAB.
- **Embedded Systems**: Microcontrollers (PIC16F,AVR,ARDUINO,ARM, STM32,RASPBERRY PI), WIFI Module(ESP8266,ESP32), IoT protocols (MQTT,CLOUD).
- **Development Tools**: PIC C Compiler, STM32 CubeIDE, Keil UVision, Microchip Studio, Arduino IDE, Visual Studio Code,MATLAB/Simulink.
- **Testing/Debugging:** Unit Testing, Integration Testing, Debuggers (GDB), Static Code Analysis,
- **Communication Protocols**: I2C, SPI, UART, Cloud, MQTT, Ethernet, USB
- **IoT Platforms**: ThingSpeak, Blynk, Node-RED

CERTIFICATION

- NPTEL-SMART GRID: Basic to Advanced Technologies
- NPTEL-Physics of Renewable Energy Systems
- Post Graduate Diploma Course In Embedded System
- Post Graduate Diploma Course In PLC & SCADA AUTOMATION

ACHIEVEMENTS

- Participated IEEE ICPECTS Conference
- Workshop on PV-SYT Grid
- Participated in Niral Thiruvizha 1.0
- Published conference paper in ICCEBS Conference

LANGUAGES

- **TAMIL**
- **ENGLISH**
- **TELUGU**(BEGINNER)

SOFT SKILLS

- Team Work
- Time Management
- Leadership
- Communication
- Problem Solving