MATHIVAANAN A

9344651396 | mathivaanana@gmail.com | https://www.linkedin.com/in/mathivaanan-a-ba96a51a7

Innovative and dedicated Embedded Software Engineer with hands-on experience in developing and implementing complex embedded systems and IoT solutions. Seeking a challenging role where I can leverage my expertise in embedded software development, technical training, and project management to contribute to cutting-edge technology projects and drive continuous improvement.

EXPERIENCE

OneModo Technologies | IoT Developer & Product Developer **2024 - Present**

- Design and develop IoT solutions, integrating Raspberry Pi, microcontrollers, sensors, and communication protocols for real-time monitoring and automation.Develop hands-on projects and practical exercises to reinforce technical skills in these areas.
- Develop and deploy cloud-based IoT applications for data visualization, remote control, and real-time analytics.
- Implement image processing techniques for AI-driven automation and embedded vision applications.
- Design and fabricate custom enclosures using SolidWorks and 3D printing to enhance product durability and aesthetics.
- Build software solutions for embedded systems, optimizing performance, efficiency, and security.
- Research and integrate cutting-edge technologies to innovate and improve IoT and embedded system solutions.

Livewire | Technical Trainer **2023 - 2024**

- Design and deliver specialized training programs in Embedded Systems, IoT with Raspberry Pi, Robotics, and AI/ML.
- Develop hands-on projects and practical exercises to reinforce technical skills in these areas.
- Create and facilitate internships focused on AI/ML, Embedded Systems, and IoT to provide real-world experience.
- Evaluate and enhance training programs based on feedback and technological advancements.
- Implement value-added courses and customized training solutions to meet specific business and industry requirements.

PROJECTS

- **Unmanned Weighbridge System Using Raspberry Pi:**Developed a fully automated weighbridge system from scratch using Raspberry Pi, integrating load cells, sensors, RFID authentication, and cloud-based data logging for real-time monitoring. Designed a custom 3D-printed enclosure for durability.
- **ANPR Camera for Unmanned Weighbridge with Raspberry Pi:**I Developed an ANPR system using Raspberry Pi and a high-resolution camera for automated vehicle number plate recognition, seamlessly integrating with the unmanned weighbridge for secure vehicle tracking and authentication.
- **Real-Time Face Recognition using Raspberry Pi with Camera Module:** Implemented a real-time facial recognition system using Raspberry Pi and a camera module for secure access control.
- **Cloud Technology-Based Health Monitoring System in IoT:** Created a cloud-based health monitoring system using IoT technology for remote patient data tracking.
- **Voice Chatbot Creation Using NLP:** Developed an intelligent voice chatbot utilizing Natural Language Processing for enhanced user interaction.

- **Phishing and DDoS Attacks with Raspberry Pi:** Conducted simulations of phishing and DDoS attacks using Raspberry Pi for cybersecurity research and training.
- **IoT-Based Gadgets for Child Safety Monitoring and Notification:** Designed IoT-based devices for real-time child safety monitoring and alert notifications.
- **Smart Irrigation System for Grape Plants:** Created an automated smart irrigation system for optimizing water usage in grape plant cultivation.
- **Smart Parking Lot Maintenance and Vehicle Counting IoT System:** Implemented an IoT-based system for efficient parking lot management and vehicle counting.
- **ESP8266-Powered Phishing Device:** Engineered a phishing device using ESP8266 to exploit vulnerabilities and gather sensitive data.
- **Iron Dome System Using MATLAB:** Simulated an Iron Dome missile defense system using MATLAB for defense strategy analysis.
- **Home Automation System Using ARM-7:** Developed a home automation system with ARM-7 for controlling household appliances and improving convenience.
- **Automatic Braking System Using ARM-7:** Created an automatic braking system utilizing ARM-7 for enhanced vehicle safety and control.

MINI PROJECTS

- **Line Follower:** Designed an autonomous robot that follows a pre-defined path using sensor inputs.
- **Bi-Directional Visitor Counter:** Created a device to accurately count visitors in both directions using microcontroller technology.
- **Sun Tracker:** Developed a system to automatically track the sun's position for optimizing solar panel performance.
- **Automatic Railway Crossing Gate:** Engineered an automated system to control railway crossing gates, improving safety and efficiency.
- **GSM-Based Street Maintenance System:** Developed a GSM-based system for monitoring and managing street maintenance activities remotely.
- **Remote Control Car Using BLE:** Built a remote-controlled car utilizing Bluetooth Low Energy (BLE) for wireless control and operation.

EDUCATION

M P Nachimuthu M Jaganathan Engineering College – B. E **2019 - 2023**
Course: Electronics and Communication

Government Higher Secondary School - HSC **2018- 2019**

Government Higher Secondary School - SSLC **2016- 2017**

SKILLS & OTHER

Programming: Embedded C, Python (Micro Python, NLP, Open CV, Pytroch, Scikit-learn, Tkinter).

Hardware: 8051, PIC16, PIC18, ARM(LPC2148), AVR (Atmega16), STM32, NODEMCU, ESP32, Raspberry pi, Arduino, Modules (GSM, GPS, BLE, Zigbee)

Software: Programing and Simulation Software's for Microcontrollers, Linux Cyber Security Attack Tools, 3D Solidworks, bamboo lab A1.

CERTIFICATIONS

Advanced C and Introductions to Embedded Programming by VAct Technology
IoT and Embedded System by Robotics and allied division (RAAD)
National Level Technical Symposium Paper Presentation in Velalar College of Engineering Technology