

MUHAMMAD SALMAN



Embedded Systems Engineer

CONTACT

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PERSONAL STATEMENT

A motivated and results-driven Embedded Systems Engineer with a strong foundation in IoT, Bluetooth Mesh Networking, and firmware development. Seeking a challenging role that will allow me to utilize and enhance my technical skills while contributing to innovative engineering solutions.

EDUCATION

Bachelor of Science in Computer Systems Engineering Oct 2015 - Sep 2019
University of Engineering and Technology, Peshawar

PROFESSIONAL EXPERIENCE

Freelancer Aug 2024 - Present
Xmark Labs, LLC, USA

- Implement Bluetooth Low Energy (BLE) solutions and work on Bluetooth Mesh Networks.

Sr.Embedded Systems Engineer Aug 2021 - Jul 2024
Chip Soul Technology (SMC-Private) Limited, Peshawar

- Develop firmware for the NRF52 Series, specializing in the NRF52840 SoC.
- Utilize the NRF52 SDK for efficient and scalable firmware development.
- Implement Bluetooth Low Energy (BLE) solutions and work on Bluetooth Mesh Networks.
- Develop software for ESP32 boards focused on IoT applications.
- Conduct hardware debugging and software testing, ensuring high reliability and performance.
- Worked with MSP430, PIC, STM32, and STM8S chips, contributing to various projects and products.

R & D IoT Engineer Nov 2020 - Aug 2021
Veevo Tech, Peshawar

- Created and developed IoT devices, sensors, and software, from conceptualization to deployment.
- Conducted research, testing, and documentation for IoT solutions.
- Designed, coded, and tested IoT features, focusing on robust and scalable solutions.
- Provided innovative solutions for network connectivity and platform integration.
- Developed ESP8266 NonOS SDK-based solutions, engaging in cross-platform compilation.
- Worked on autonomous drone flight projects using Pixhawk4 flight controllers and mission planner software.

Trainee Engineer Apr 2019 - Sep 2019
Premier Logistics Solution

- Troubleshoot and maintained PCs, set up Local Area Networks, and configured routers and switches.
- Provided support for Microsoft Word & Excel, ensuring smooth operation across the organization.

Network Engineer Oct 2019 - Jan 2020
Sarhad Rural Support Program

- Develop basic scripting skills in Python or Bash to automate routine network tasks such as configuration management and log analysis.
- Gain practical experience with essential network protocols (HTTP, DNS, DHCP, etc.) and tools for packet capture and

analysis (Wireshark).

- Enhance ability to communicate technical information effectively to various stakeholders and work collaboratively within a team, including documenting and presenting findings and solutions.

CERTIFICATES

KPYOUTH Employment Program (IoT)

Jul 2017

This certification was awarded for completing the KPYOUTH Programme in Internet of Things (IoT). The program focused on practical skills and knowledge related to IoT systems, including **Sensor Integration, Microcontroller Programming & Cloud Data Transmission**

KPYOUTH Employment Program RPi (IoT)

Jul 2017

This certification was awarded for completing the KPYOUTH Programme, which focuses on using Raspberry Pi for Internet of Things (IoT) applications. The program covered **Raspberry Pi Sensors Integration, Programming, Configuration & Cloud Connectivity**.

CMake Cross Platform Build Systems

Aug 2024

Completed an online course on CMake build systems, focusing on **CMake Fundamentals, Build Configuration & Advanced Features**. This certification demonstrates proficiency in using CMake for efficient and scalable build system management in software development projects in C/C++.

SKILLS

- Designing and developing embedded systems, including hardware and firmware.
- Hands-on experience with STM32, nRF52, Arduino framework-based MCUs, and Raspberry Pi.
- Firmware development with advanced skills in C/C++ programming for low-level firmware & proficiency with FreeRTOS and Zephyr.
- Integrating sensors and managing ADC/DAC, I2C, SPI, UART & Used development tools like Keil, Segger Embedded Studio, IAR, VS Code, Git, and CMake.
- Knowledgeable in TCP/IP, MQTT & Modbus Communication Protocols and others.
- Debugging experience with oscilloscopes, logic analyzers, and in-circuit debuggers like J-link.

SOFT SKILLS

- Problem-solving, analytical skills and troubleshooting expertise.
- Experienced in managing projects and timelines effectively.
- Ability to work effectively in cross-functional teams (Team collaboration).
- Proficient in creating detailed technical documentation & good at conveying technical information and preparing reports.

PROJECTS

Following are the projects that I have completed and working on.

- **BLE Sensor Mesh Network:** Developed a sensor mesh network using the NRF52 Series Mesh SDK.
- **UV Light Disinfectant Control:** Controlled UV light disinfectants via an Android app for smart home applications.
- **Building Environment Control:** Implemented IoT solutions to monitor and control environmental conditions in large buildings.
- **Accident & Over-Speed Detection System:** Created an IoT-based system for detecting accidents and over-speeding.
- **Digital Dashboard for EVs:** Developed a digital dashboard for electric vehicles, providing real-time data and tracking.