

Saurabh Nishad

Embedded Architect | Internet of Things | Product Developer |
Speaker/Trainer

Profile

With around 9+ years of experience collaborating with semiconductor companies, startups, and government/semi-government organizations, I am eagerly seeking an opportunity to contribute to organizational growth and development. My expertise spans Embedded Architecture, Internet of Things, Product Development, and Speaker/Training roles, making me a versatile professional with a passion for leveraging technology for impactful solutions.

EXPERIENCE

Senior Software Engineer – (October 2024 – Present)

Motive Technologies

Roles and Responsibilities:

- Designed and developed new features for the Asset Gateway, ensuring comprehensive test coverage and code reliability.
- Contributed to feature development for the Vehicle Gateway, with a strong focus on implementing unit tests and maintaining high code coverage standards.
- Led enhancements in the analytical section of the Vehicle Gateway, providing clear evidence of reduced packet overhead in transmitted messages. Additionally, conducted a detailed cost analysis demonstrating the monetary benefits resulting from these optimizations.

Consultant – (September 2024 – December 2024)

Pankhtech India Pvt. Ltd – Gurgaon

Roles and Responsibilities:

- Leading the design and development of neurofeedback-based headphones with integrated neurostimulation technology.
- Providing end-to-end solutions for hardware and firmware architecture, ensuring robust and scalable design.
- Collaborating with cross-functional teams to ensure seamless integration of neurofeedback and neurostimulation features into the product.
- Delivering expert guidance on sensor integration, signal processing, and low-power optimization for enhanced device performance.
- Supporting prototype development and pilot testing to validate functionality and user experience.

Sr. Application Engineer – (April 2022 – Aug 2024)

STMicroelectronics Pvt. Ltd – Bangalore

Roles and Responsibilities:

- Driving Reference Design Development to expedite startups and customers' go-to-market strategies.
- Providing hands-on support to customers in the design and development of their products.
- Delivering training sessions to STMicroelectronics' customers, ensuring comprehensive understanding and successful implementation.

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[My LinkedIn Profile](#)

TECH STACK

Microcontrollers/Microprocessor Used for Projects

- ARM Cortex-M/A {Stm32 Microcontrollers and Microprocessor}
- STM8 Series of Controller
- Qualcomm Snapdragon 820
- AVR [Atmega328p, Atmega2560]
- Espressif [esp32, esp8266]
- 8051

Embedded Peripherals Used

- Audio : I2S, SAI, DFSDM
- Comm Protocol: SPI/I2C/UART/DMA/CAN
- USB
- Graphic: RGB/ART/LTDC
- Network : Ethernet

Middleware Integration with ARM MCU

- BLE/WiFi on ESP32
- LwIP (IP Suite)
- ST BLE Stack (Bluetooth)
- LoRAWAN Stack (LoRA Stack)
- USB Stack
- FatFS

Programming Languages

Language	Level
C (Embedded + System)	Expert
C++	Intermediate
C#	Beginner
Python/Bash Scripting	Beginner

Embedded Operating System

- FreeRTOS (RTOS)
- Azure-RTOS

Application Engineer – (January 2020 – March 2022)

STMicroelectronics Pvt. Ltd. (3rd Party payroll “G4S Solution”) –
Noida

Roles and Responsibilities:

- Contributed to Application/Middleware Development, extending ST’s MCU/MPU/SoC functionality portfolio.
- Offered crucial support to customers in the design and development phases of their products.

Senior Embedded Software Engineer – (Jan – Dec 2019)

Shellios Technolabs – Noida NCR

Roles and Responsibilities:

- Led a multidisciplinary team in the end-to-end design and development of embedded systems for [Shellios's smart helmet](#) product suite.

Consultant and Freelancer – (Jan – Dec 2018)

(Smarttech3DP/Sennet Control GmbH.)

Roles and Responsibilities:

- Provided technical support for product development, focusing on Firmware Development and IoT Connectivity Solutions.

Embedded Firmware Engineer – (Jan – Dec 2017)

Intelto Transpo Pvt. Ltd. – Noida NCR

Roles and Responsibilities:

- Designed a complete Bootloader for OTA with Quectel M95 (GSM Module) and developed firmware for the [VTS Project](#).

Embedded Trainee Engineer – (Jan – Dec 2016)

STMicroelectronics Pvt. Ltd. – Greater Noida

Roles and Responsibilities:

- Contributed to firmware development and demo application design.
- Designed an NFC-based IR Thermometer for measuring body temperature.

EDUCATION

Instrumentation and Control Engineering

Galgotias College of Engineering and Technology – *B-TECH*

MAY 2012 - APRIL 2016

Major Projects

VoiceEdge Command Detector

- Developed solution on STM32H7 integrated with ST-MEMS Mic to perform voice recognition with on board inferencing with Keras Model.
- Work on complete design (Firmware Design + Model Training)

Smart Helmet

- BuildRoot (Embedded Linux)
- Zephyr (RTOS)

Operating Systems

- Linux [Ubuntu/Debian]
- Windows

IDEs

- STM32CubeIDE/EWARM/Keil – C Development
- Visual Studio Code
- Android Studio – For Android Prototyping
- QT – Linux Application Prototyping

IOT protocols

- mqtt
- coap

Version Control System

- Git
- SVN

Productivity Tools

- JIRA
- Doxygen
- Latex
- Confluence

Miscellaneous

- Design-Pattern (MVP/MVVM)
- Linux System programming
- Linux Kernel build process
- Linux Kernel programming
- Data Structures
- Arduino based rapid prototyping
- KiCad/ Altium Schematic design
- Embedded Hardware Design
- Oscilloscopes
- Power Supply Analysis
- Node-Red
- AWS – (IoT-Core/Greengrass/EC2/Lambda)

- Led the development of a diverse series of [Smart Helmets](#), showcasing features such as Air-Purification, Bluetooth integration, and an immersive AR experience.
- Contributed in Schematic Design, Firmware Development.

Industrial Air/Pressure Monitoring Device – Device

- [PRO air | Quality monitoring \(pro-air.eu\)](#) : Designed Industrial Pressure and Air Quality Monitoring device using the TI-Sitara Processor and STM32.
- Data Accumulator: Developed STM32 firmware for efficient environmental sensor data collection.
- UI Manager: Created QT-based UI on TI-Sitara, ensuring seamless integration via cross-compilation.

