

Arsh Ahmad

SENIOR HARDWARE ENGINEER

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Summary

A highly motivated and detail-oriented Senior Hardware Engineer with a strong foundation in Hardware System Design, PCB design, and embedded systems. Seeking to apply expertise in designing high-performance, compact electronic systems. Proven ability to rapidly learn new technologies and deliver robust solutions. **Recognized as part of the AllSpice Top 50 Hardware Innovator List 2026.**

Skills

High Speed Interfaces: Gigabit Ethernet, PCIe, Gigabit Transreceivers Hardware Design.

Analog/RF: Signal Integrity, Power Integrity, Op-Amps, RF Amplifiers, Filters and Matching Networks, Low Noise Analog circuits. Understanding and hand on experience with multiple special purpose circuits and systems.

PCB Design: KiCAD, Cadence Allegro, Altium Designer, BGA PCB designs, High Layer Count Boards, HIGH speed PCB designs.

Digital Hardwares: Microcontrollers and Processors (STM, ATMEL, RP Series and ARM Designs), FPGA (Xilinx, Microchip, Renesaas).

Tools: Oscilloscopes, Spectrum Analyzers, Logic Analyzers, SPICE, Signal Integrity and Power Integrity Measurements and Simulations. Along with capabiity to perform various complex system Measurements

Product Design: Knowledge of Solidworks, Fusion 360 and mechanical Design, along with strong ECAD and MCAD integration skills.

Firmware/FPGA: Basic VHDL and Verilog along with foundational skills to design a complete FPGA system from Scratch, Embedded C, FreeRTOS. Microntroller bringup to advanced application development.

Experience

Senior Hardware Design Engineer

Apr 2025 – Present

QuNu Labs Pvt. Ltd. Bengaluru

- Designed the hardware for Single Photon Detector.
- Designed various Low noise photo-diode amplifiers.
- Managed the full hardware life cycle, from schematic capture to manufacturing hand-off.

Hardware Design Engineer

Jun 2022 – Mar 2025

QuNu Labs Pvt. Ltd. Bengaluru

- Design multiple High Speed FPGA Carrier cards.
- Designed various ARM and ATMEL MCU boards.
- Handled the Analog and Mixed signal designs across various critical Projects.

Projects

Single Photon Detector

QuNu Labs Pvt. Ltd. | Project Lead | 2024 – 2026

- Designed a Low Noise High Voltage Programmable Bipolar Voltage source and Wrote the embedded software for it.
- Designed Low Noise Amplifier, including low noise transimpedance amplifiers, High speed GHz frequency Pulse Amplifiers.
- Developed Various FPGA FMC cards for different requirements and developed FPGA design for the bringup of the same.
- Designed multiple novel high-speed feedback control circuits for single photon detector.
- Designed a low noise Balance Photo Detector for Homodyne Detection.

QORE-Encryptor

QuNu Labs Pvt. Ltd. | Hardware Lead | 2025

- End to End developed the Complete Hardware including High Density 8 Layer Processor Board with Multiple BGA parts including FPGA and Processors.
- Wrote Basic Bring-up firmware for the same.

QSHIELD - RAC

QuNu Labs Pvt. Ltd. | Product Lead + Hardware Developer | 2023-2024

- Developed complete hardware product from conceptualization to production release.
- Developed end to end ARM processor Based Hardware with Gigabit Ethernet.
- Worked Closely and also co designed the mechanical housing for the same.

Quantum Key Distribution and QRNG

QuNu Labs Pvt. Ltd. | Hardware Developer | 2022-2025

- Developed various Low Noise Analog and Digital MCU based boards for the system.
- Characterization and Design of various control circuits like Laser Drivers, Temperature Controllers.
- Developed Hardware and Firmware system for various tamper and intrusion detection systems

Education

Bachelor of Electronics and Communication Engineering Technology

SRMCEM Lucknow

2022

Shri Ramswaroop Memorial College of Engineering and Management.

Diploma in Electronics Engineering

Government Polytechnic Pratapgarh

2017

Government Polytechnic, Pratapgarh.