Vinod Kumar G

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Summary

Senior Embedded Software Engineer with 13+ years of experience in designing, developing, and testing embedded and IoT systems. Proficient in Embedded C/C++, Python, real-time microcontroller programming (8/16/32-bit), IoT protocols (BLE, ZigBee, GSM, NB-IoT), and post-silicon validation. Demonstrated expertise in board bring-up, RTOS-based development, and secure, scalable firmware solutions across industries including automotive, HVAC, healthcare, and smart lighting.

Skills

- **Languages:** C, Embedded C, Python, Assembly
- **RTOS:** FreeRTOS, ThreadX, Contiki, OpenWRT
- **Protocols:** UART, SPI, I2C, MODBUS, CAN, BLE (4.0–5.2), ZigBee, GSM, NB-IoT, NFC, GPS
- **Tools/IDEs:** IAR, Keil, CCS, MPLAB X, AVR Studio, Lauterbach, Segger, Git, Jenkins
- **Microcontrollers:** STM32, MSP430, SAMD/SAML, nRF52, LPC2148, ATmega, BG96
- **Hardware:** Oscilloscope, Logic Analyzer, Eagle, KiCad, Altium, PCB design and bring-up
- **DevOps:** GitHub, GitLab, Jenkins, Jira, Confluence

Experience

Senior Software Engineer – Susash Consulting (Client: Caterpillar Inc) — Sep 2022 to Oct 2023
- Developed and integrated machine software libraries for embedded systems.
- Built configuration data sets and validated feature integration across subsystems.
- Managed software validation plans and coordinated defect resolution across teams.

Lead-II Embedded Software – UST Global — Mar 2021 to Jul 2022
- Designed firmware for smart lighting controllers using NB-IoT and ZigBee.
- Led team in migrating legacy products and evaluating new technology platforms.
- Collaborated with QA teams for testing and vendor coordination.

Senior Firmware Engineer – 75F — Dec 2019 to Jan 2021
- Built firmware for smart HVAC systems using Microchip SAMD/SAML with BLE and RF.
- Developed drivers for environmental sensors and managed BLE/RF stacks.
- Led debugging efforts and contributed to field issue resolution.

Embedded Design Engineer – Xpheno (Client: West Pharma) — Apr 2019 to Dec 2019
- Developed BLE/NFC firmware on nRF52 for healthcare devices.
- Built BLE wake-up and low-power inductive load sensing features.

Advanced Consultant – Altran India (Client: Qualcomm, Intel) — Feb 2016 to Jan 2019
- Led post-silicon validation and production test automation using Python and C.

- Validated SPI, QSPI, OSPI and SOC features across test environments.

Earlier Roles: POSH Labs, Real Time Signals, Nxt Gen Technologies (2013–2016)

- Developed IoT prototypes using Contiki OS, CoAP, and ZigBee.
- Designed and tested embedded systems for home automation and vehicle tracking.

Education

M.Tech in Embedded Systems, JNTU Anantapur — 2011–2013 (72%)
B.Tech in ECE, JNTU Anantapur — 2007–2011 (60%)