Sajesh S F

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Engineering leader with 7+ years of experience delivering IoT, embedded systems, and enterprise applications/SaaS solutions across industrial, medical, aerospace, and fintech domains. Proven record of transitioning products from prototype to large-scale deployments, leading cross-functional engineering teams (35+ members), and ensuring zero-downtime operations across global infrastructure. Skilled in Agile/Scrum leadership, application development (C#, .NET, React.js, WPF), cloud platforms (Lambdas, AWS, IaC), and real-time embedded/IoT integration (C, C++).

KEY COMPETENCIES

- Proven Engineering Leadership
- Software & Embedded Development
- IoT & SaaS Expertise
- System Integration & Field Validation
- Cross-Functional & Global Team Management
- End-to-End Product Commercialization
- Customer & Business Alignment
- Agile/Scrum Leadership

PROFESSIONAL EXPERIENCE

American Security — Jun 2024 - Present

Head of Software Engineering

- Ensured zero-downtime operations across a fleet of 15,000+ deployed safes featuring a multi-board architecture with NXP K60/K66/K20 MCUs, alongside Android apps, AWS-hosted cloud microservices, and Windows desktop applications.
- Driving the pilot rollout of next-generation CashWizard safes, built on Yocto Linux with NXP i.MX9 SoC. Managed the development of gRPC-enabled C firmware and a React.js touchscreen interface.
- Re-architected the cloud reporting module (originally a .NET microservice + MSSQL) that generated 13 reports across 15k+ smart safes. Reduced report generation time from 45 minutes to near-instantaneous by designing a new architecture using AWS Lambda, Amazon Aurora, DynamoDB, and Redis.
- Manage offshore development teams in India while closely collaborating with the component development team in Korea and the production team in China to ensure seamless integration and delivery.

Travancore Analytics — Oct 2018 - May 2024

Progressed from Intern to Group Lead over a span of 5 years

Group Head – Embedded Systems — **Jan 2023 - May 2024**

- Led a 35+ member engineering team (engineers, leads, and PMs) delivering outsourced product development across 4 client accounts, managing a $600k+ portfolio.
- Introduced project health frameworks (finance, delivery, customer satisfaction) to improve predictability and client trust.
- Expanded business portfolio, growing a new client account from $0 → $100K in one year.

Other Projects

- NiOX Product Line: Managed all phases of development for the NiOX data acquisition and test automation platform, a one-stop solution designed to qualify space subsystems. Delivered multiple product variants (NiOX1900, NiOX2100, NiOX1553, etc.), integrating WPF/.NET-based control software, Xilinx Zynq SoC (ARM + FPGA), ADC/DAC modules, FreeRTOS, and Ethernet stacks. Enabled the qualification of critical ISRO systems, including the SMA, FWA, SADA, and BLDC actuators.
- Xcross Industrial CT: Architected and developed WPF/.NET-based motion control and fluoroscopic imaging software, integrating a 4-axis motion controller, GigE detectors, and COM-based emitters. Enhanced imaging performance by building a CUDA-based image processing module. Led onsite integration and system qualification with client teams in Nagoya, Japan.
- MechaSense IoT: Developed a scalable HVAC platform on ESP32/Raspberry Pi hardware and firmware, supporting 50+ daisy-chained I^2C sensors with MQTT-based data publishing and LTE/Wi-Fi connectivity. Simultaneously oversaw the development of a React/Node.js web application and a React Native mobile app for real-time data visualization and device control.
- TigerView: Led the revamp of a cloud-based DICOM imaging platform with .NET 6, Angular, and MySQL, hosted on AWS (S3, EC2, CloudFront). Delivered a modern, cross-device UI and secure patient image sharing, and implemented CI/CD pipelines with GitHub Actions to streamline deployments and improve release velocity.
- OWN Smart Shoe (Wearable IoT): Designed Zephyr RTOS firmware for the nRF52 SoC, integrating advanced sensors including LG77 GNSS, LSM6DSM accelerometer/gyroscope, HX711 load cell, and MAX30102 for heart rate/temperature monitoring. Implemented BLE streaming to mobile apps, OTA updates, and 15W Qi wireless charging via the MWPR1516 controller.
- Robotic Arm for LEO: Managed the development of an interface PCB and supporting software (NVIDIA Jetson Orin) to support the motion of a 7 DOF Robotic Arm (motors interfaced over CAN and RS485).

EDUCATION & CERTIFICATIONS

B.Tech – Electrical & Electronics Engineering | College of Engineering, Kerala, India | 2018