



Shekhar Singhal

Tech Lead | Embedded Systems

Open to Relocation within EU

- +351-964557503, +91-8527801799
- Male | 37 Years Old | INDIAN
- Lisbon, Portugal – 1350-274
- Shekhar.singhal6@gmail.com
- www.linkedin.com/in/shekharsinghal

Professional Summary

Tech Lead and Embedded Systems Specialist with **13+ years** driving innovation in embedded systems and intelligent automation. Combining hands-on **technical leadership** in **edge AI/ML, vision systems, and modular architectures** with full accountability for complex R&D project delivery. Proven expertise in designing and implementing **bare-metal and RTOS-based embedded solutions** across diverse hardware platforms — from low-level driver development and hardware interfacing to multi-camera industrial inspection systems and AI-optimized edge deployments. **At Siemens and ALSTOM**, served as the **primary technical authority** — architecting embedded solutions, leading firmware development, and driving system integration across multinational cross-functional teams to deliver technically complex products on time and within budget.

Skills

- Languages** Embedded C/C++, Python, TCL, Assembly, Shell Script, Structured Text, IEC 61131, UML
- OS / RTOS** Bare-Metal, FreeRTOS, Mbed OS, ThreadX, µC/OS, VxWorks, Linux, Windows
- Protocols** UART, SPI, I2C, USB, 1-Wire, BLE, Wi-Fi, Bluetooth, RF, GPS, GSM, CAN, IR, Custom Protocol via Bit-Banging
- DevOps & ALM** Git, GitHub, SVN, BitBucket, JIRA, Confluence, Mantis, Azure DevOps, AWS IoT Core, IBM ALM (DNG/RTC/RQM), SharePoint, MITRAC TCMS, Control Build, MS Project
- Domains** Edge Computing, AI/ML Optimization, Vision Systems, Modular Architectures, CI/CD Frameworks, IoT, Firmware Development, Middleware Design, System Integration

Work Experience

- **Siemens** Lisbon, Portugal Jan'24 – Till Date
 - **Tech Lead / Senior Embedded Software Developer**
 - Spearheaded the **CoreAssets/Modularization** initiative — delivering modular architecture and CI frameworks for SEA within Siemens Digital Industries, enabling adaptive product portfolios
 - Built and led development of camera applications for **GenScan 360° DCP** — multi-frame aggregation, real-time recording from 40-camera arrays, and HTTP streaming for industrial inspection systems
 - Researched and optimized **AI/ML models** for deployment on resource-constrained embedded devices, advancing Siemens' edge computing & intelligent automation portfolio
 - Managed R&D projects with full accountability for cost, schedule, quality, and customer satisfaction using SDS principles; steered budget, resources, and project agreements
 - Championed cross-functional collaboration and continuous improvement culture through knowledge management and best practice sharing
- **ALSTOM** Vadodara, INDIA Jun'21 – Apr'23
 - **Software Lead Engineer / Product Owner**
 - Owned **2 products** (Wireless Crew Device & Video Analytics) — **€1.8M budget, 14-member global team, 2-year roadmap**.
 - Designed resource loading plan enabling 5 team members to concurrently deliver 3 projects: championed DOORS/DNG requirements engineering.

Key Achievements:

- Reduced firmware ELF size by **18%** & CPU load by **50%** | Boosted team efficiency by **20%** via traceability matrix (DSD → SYRS → SRS → Code)

- **Logic Fruit Technologies Pvt. Ltd.** Gurugram, INDIA *Sept'15 – May'21*
- **Project Lead / System Architect — (Apr'19 – May'21)**
 - Managed **18+ development & integration projects**, leading **20-member cross-functional teams** (SW, HW, FPGA, QA)
 - Handled full project lifecycle — resource planning, timeline management, and budget optimization
 - **Module Lead / Software Architect — (Apr'16 – Mar'19)**
 - Architected firmware, middleware & hardware solutions across diverse embedded applications
 - Conducted technology research to enhance system performance; led 3rd-party & customer system integration
 - **R&D Engineer — (Sept'15 – Mar'16)**
 - Designed & implemented embedded applications and low-level drivers
 - Executed comprehensive hardware testing using DSO, CRO & logic analyzers for firmware validation & debugging
- Key Achievements:
- Developed innovative software architecture reducing development effort by **40%** and achieving **70% code reusability** across new projects
 - Successfully **delivered 6 projects** to Indian and international clients (Finland & Germany)
 - Hired and **mentored 8+ team members**, accelerating a 6-month project delivery to **4 months**
- **IGen Solutions Pvt. Ltd.** Pathankot, INDIA *Mar'15 – Aug'15*
- **Chief Research Officer**
 - **Formulated and executed investigation** tactics aimed at accomplishing customer objectives.
 - Offered guidance and assistance to researchers for the purpose of **facilitating advancement** and **maturation** in the field.
- Key Achievements:
- During my 6-month tenure, I conducted research and developed over **5 products/projects**.
- **Multisoft Systems** Noida, INDIA *Sept'12 – Feb'15*
- **Senior Consultant – Embedded Systems**
 - Created a total of **10+ training modules** & processes and delivered them across the country.
 - Trained **1000+ Students** & **100+ Corporate** Employees and mentored **15+ postgraduate scholars**
- Key Achievements:
- Developed **10+ Projects/Products**
- **CETPA Infotech Pvt. Ltd.** Noida, INDIA *Jan'11 – Aug'11*
- **Embedded System Trainer**
 - Provided training and developed, coded, tested & debugged embedded solutions for **8051 & AVR Family MCU's in Assembly, Embedded C & C++** language.

Education

- **M.Tech, VLSI Technology** — Sharda University, Gr. Noida, India *2011–2013*
 - **Advanced Diploma, Embedded Systems** — ThinkLABS, SINE, IIT Bombay, India *2010*
 - **B.Tech, Electronics & Communication** — Uttarakhand Technical University, Dehradun, India *2006–2010*
-

Languages

- **Hindi (Native)** · **English (Proficient)** · **German (A1 — Learning)** · **Portuguese (A1 — Learning)**