S. Jeevanandham

Senior Software Engineer – Automotive & Medical HMI | UI/UX | Qt / QML | Embedded C++

📍 Chennai, Tamil Nadu, India

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Professional Summary

Senior Software Engineer with **4.9+ years of experience** in **Automotive HMI, Infotainment Systems, Instrument Clusters, and Medical Device HMI development**, specializing in **Qt/QML, Embedded C++, UI/UX, communication protocols, and real-time application engineering**. Delivered **production-grade HMIs** for automotive instrument clusters and infotainment platforms, and developed **medical physiotherapy device interfaces**. Experienced in **A-SPICE aligned development, Agile execution, CI/CD pipelines, documentation discipline, UART communication frameworks (structured byte framing + CRC), SQLite database integration, and Linux-based system development**. Focused on **reliability, usability, system stability, and safety-aware interface behavior**.

Technical Skills

- **Primary Language:** C++ (C++11–C++17), OOP, STL, Smart Pointers, Pointers/References, Structures, Bit Manipulation
- **Technologies & Frameworks:** Qt/QML, Qt Widgets, TouchGFX, GUI Guider, Crank Storyboard, Candera CGI Studio, LVGL, VG Lite, Qt 3D Studio, Qt Design Studio
- **Embedded & OS:** Free RTOS, Embedded Linux, Yocto, Ubuntu
- **Communication Interfaces:** UART, SPI, I²C, CAN
- **Tools:** Git, Plastic SCM, Jira, CMake, Jenkins, STM32Cube IDE, MCUXpresso, TK Logger, Enterprise Architect
- **Testing & Debugging:** Manual Testing, GDB, DLT Viewer, HIL Testing, ECU Verification
- **Database:** SQLite3
- **Design:** Figma, Adobe Creative Suite, GIMP, FontForge, Affinity, Miro
- **Methodologies:** Agile / Scrum, A-SPICE Documentation, UML
- Awareness of ISO 26262 concepts with focus on safety-oriented HMI behavior, system reliability, deterministic performance, and user-safety considerations.

Professional Experience

PixelExpert Technology and Services Pvt. Ltd., Chennai, Tamil Nadu

- **Senior Software Engineer —** Sep 2024 to Jan 2026
- **Embedded Software Engineer —** Apr 2022 to Aug 2024
- **Graduate Engineer Trainee —** Sep 2021 to Mar 2022

Lapiz Digital Services Pvt. Ltd., Chennai, Tamil Nadu

- **Graphics Designer Trainee —** May 2019 to Sep 2019

Projects

Domain: Medical Device HMI Development Oct 2024 – Jan 2026

Physiotherapy Laser Therapy Treatment Control and Database Management System.
Role: HMI Designer, HMI Developer & UI/UX Engineer
Technologies: Qt/QML, C++, SQLite3, Linux, Git, UART (CRC)

- **Designed and developed the Physiotherapy Medical Device HMI, implementing treatment workflows, UI logic and user-focused screen interactions with safety and reliability considerations aligned with medical development discipline.**
- **Built SQLite3 database layer for patient records and treatment history.**
- **Developed custom UART communication framework including data framing, CRC validation, parsing and secure response handling.**

- **Integrated Linux-based device control operations and system logic.**
- **Conducted structured validation, documentation alignment, debugging, and system stability improvements.**

Instrument Cluster HMI Development (LVGL Cluster) Nov 2023 – Sep 2023

Basic Vehicle Instrument Cluster System
Role: HMI Developer & UI/UX Engineer

- **Next-Gen Cluster – MIMXRT1170 EVKB (Embedded C, LVGL + VG Lite) — High-performance rendering with ADAS-style visualization widgets and low-level optimization.**

Domain: Automotive Instrument Cluster & Infotainment Systems Mar 2023 – Sep 2023

In-Vehicle Infotainment System (SUV Platform)
Role: HCL External Employee – HMI Developer & UI/UX Engineer
Technologies: Qt/QML, C++, Figma Enterprise, Plastic SCM, Jenkins, Jira, Polarion, Linux

- **Developed multiple infotainment HMI modules including Calls, Media, Settings, Vehicle Statistics, Steering Controls & Bezel Button Functions.**
- **Worked in Agile sprint cycles, handled structured requirements & defect workflows using Jira and Polarion in A-SPICE aligned environment.**
- **Integrated builds through Jenkins CI/CD and maintained version control using Plastic SCM.**
- **Performed system validation via TK Logger, ensuring reliability, latency control, and consistent user experience.**

Instrument Cluster HMI Design (Basic Cluster) Nov 2022 – Mar 2023

Vehicle Instrument Cluster System (Sports Bike)
Role: Tool-Based HMI Developer & UI/UX Engineer
Technologies: Qt/QML, C++, SQLite3, Linux, Git, UART (CRC)

- **Advanced Cluster – i.MX6 (Qt/QML, Linux) — Modern cluster with 5-button navigation, themes, customizable widgets, structured UART framework, Git & Jira workflow discipline.**
- **Designed performance-optimized 2D / 2.5D graphical animations.**

Instrument Cluster HMI Development (Two-Wheeler Program) Jan 2022 – Sep 2022

Vehicle Instrument Cluster System (Sports Bike)
Role: Tool-Based HMI Developer & UI/UX Engineer
Technologies: Candera CGI Studio, Lua, SCML, CMake, Adobe Photoshop

- **Developed production-level Instrument Cluster HMI for a leading two-wheeler OEM (NDA Safe).**
- **Implemented state machines, structured UI navigation, settings & core functional workflows with driver readability & safety principles in mind.**
- **Designed performance-optimized 2D / 2.5D graphical animations.**
- **Managed CMake-based build workflows and documentation discipline consistent with automotive development standards.**

Instrument Cluster HMI Design (Basic Cluster) Sep 2021 – Dec 2021

Basic Vehicle Instrument Cluster System
Role: Tool-Based HMI Developer & UI/UX Designer
Technologies: STM32 Cube IDE, STM32 Cube MX, Touch GFX, Adobe Illustrator, Adobe XD, Figma, Adobe Photoshop, Font Forge

- **Hands-on embedded development training in UART, SPI, I²C, and GPIO.**
- **Built Embedded C prototypes on STM32 platforms.**
- **Developed TouchGFX-based Instrument Cluster Prototype with structured UI graphics.**

- **STM32F469G Cluster (TouchGFX) — Speedometer, odometer, alerts, trip meters, fuel meter with auto-generated UI + embedded integration.**

INTERNAL / R&D PROJECTS (Capability & Innovation Work)

- **ADAS 3D Demonstrator – i.MX8M (Qt 3D Studio + Blender) — Collision visualization and parking assist UI demonstrator.**
- **Developed TouchGFX-based Instrument Cluster Prototype with structured UI graphics.**

Education

B.E. – Electronics & Communication Engineering
Adhiparasakthi College of Engineering (Anna University), Tamil Nadu
2015 – 2020 | CGPA: 6.34 / 10

Certifications

- **Qt 6 Core (Beginner, Intermediate, Advanced) — Udemy & QML Beginners — Udemy**
- **Google UX Design Professional Certificate — Coursera (Credly Verified)**

Key Domains

Automotive HMI | Instrument Cluster | Infotainment Systems | Embedded UI Systems
Medical Device HMI | Real-Time UI & Communication | UX & Human Factors Engineering