



Result-oriented professional targeting roles in Automotive Electric Vehicle domain and Embedded System Engineering with a focus to derive key insights from business problems.



PROFILE SUMMARY

- A focused professional, with Post Graduate Diploma in Embedded Systems (DESD) from CDAC offering around 3 years of experience as Automotive Embedded Engineer.
- Capability in streamlining development and validation processes, establish clear communication pathways, and foster collaborative environments, as evidenced by your experience in project management, test bench establishment and team empowerment through training sessions.
- Knowledge in coding, testing and debugging system software while analyzing and enhancing efficiency, stability and scalability of system resources.
- Proficiency in software tools like Canoe tool, & ECU test tool, PREEvision tool as well as programming languages such as Embedded C and scripting languages like Python & CAPL with hand-on experience in diagnostic communication protocols (UDS) and communication protocols (CAN, UART, SPI, I2C),
- Proven leadership in managing and leading projects such as the design of E- Cockpit System Architecture and validation of Infotainment | HMI | Connectivity | Telematics features (UI/UX), showcasing skills in system architecture design, requirement analysis, test case development, and hardware-in-the-loop (HIL) testing.
- Skills in testing systems regularly to eliminate potential issues provide system level support working with cross-functional teams (Body, Chassis, EPT, Connectivity, Mechanical, Software, Hardware) & so on.



EDUCATION

- 2021: Post Graduate Diploma in Embedded Systems** from Centre for Development of Advanced Computing| Pune | 67%
- Theoretical and practical exposure in the concepts of Embedded Systems and Design.
- Architectural understanding of microcontroller and microprocessor.
- Understanding and learning of programming languages like Embedded C and Data Structure, Embedded OS, RTOS, Boot loader concepts.
- Hands experience on the electronic boards like STM32F303VC, ESP32 discovery board.
- 2018: B.Tech. in Electronics & Communication Engineering** from Institute of Engineering, Dr. RMLAU | Ayodhya UP | 72.04%
- Gained knowledge on the engineering subjects like Communication systems, digital systems, analog systems and microcontroller basics, Engineering Mathematics.



WORK EXPERIENCE

Fev India Pvt. Ltd. | Pune | India Project
Engineer | May' 2022 – August 2024

Responsibilities:

- Successfully executing project demands diverse talents, from management to team members, each fulfilling specific roles with unique responsibilities that align with the project's goals.
- Preparing, reviewing and maintaining project technical documentation and reports & identifying project risks related to technical executions and proposing mitigation strategies.



CORE COMPETENCIES

System Validation

HIL Testing

System Architecture Design

Requirement Analysis

Firmware Development

Test Case Development

Embedded System Design

CAN BUS

Embedded C



TECHNICAL SKILLS

- Software Tools:** Canoe, ECU test, PREEvision, JTAG debugger, Eclipse IDE
- Programming Language:** Embedded C
- Scripting Language:** Python, CAPL
- Diagnostic Communication Protocol:** UDS
- Communication Protocol:** CAN, UART, SPI, I2C
- Project Documentation Tools:** MS Office
- Project Management Tool:** Jira



CERTIFICATION

- ISO 26262 Functional Safety Course Certificate from Udemy
- Mastering CAN Network: Vector CANoe, CANalyzer, CAPL & Theory Certificate from Udemy



PROJECTS

Project: Led the Design of E-Cockpit System Architecture | (System Engineering) |

Role: System architecture

Responsibilities:

- Streamlined the development of the E-cockpit by designing logical function architectures using draw.io and PREEvision tools.
- Cultivated effective communication pathways by precisely defining transmitter and receiver signals with well-structured naming conventions, precise value coding and exacting range specifications.
- Facilitated seamless data exchange; strengthened system integration capabilities by intricately mapping signals across diverse domains, promoted an interconnected ecosystem that encouraged cross-functional collaboration.
- Deepened overall system comprehension by rigorously mapping signals across multiple levels as vehicle level, domain level, subdomain level, feature level and function levels.
- Utilized industry-standard requirements management tools (e.g., JIRA) to maintain traceability and facilitate change management.
- Developed and documented E-Cockpit system architecture. Created vehicle one-pagers, use case and activity diagrams to model system interactions and behavior

Project: Led the Validation of Infotainment | HMI (UI/UX) | Connectivity | Telematics Features for EE Performance

Role: Validation Engineer

Responsibilities:

- Led comprehensive requirement analysis to ensure thorough test coverage, fostering alignment and clear understanding among stakeholders across all project
- Developed and rigorously reviewed comprehensive test cases for a wide range of vehicle features, including smart features (Wi-Fi, Bluetooth, Android Auto, Apple Car Play, etc.) and non-smart features (radio, display, driver assistance systems). Utilized test design techniques like boundary value analysis and equivalence partitioning to ensure thorough coverage across multiple vehicle models and regions (US, Europe, Vietnam)."
- Developed and reviewed, executed dynamic test cases for vehicle-in-motion functionality, including light control, light settings, media, radio, navigation, trip computer, Wi-Fi, connectivity, and audio settings.
- Developed and rigorously reviewed comprehensive test suites, encompassing both manual and automated test cases, to optimize testing efficiency and effectiveness for smart and non-smart features.
- Executed and validated Infotainment, HMI, and Connectivity features across multiple vehicle models and feature releases in diverse regions (US, Europe, VN).
- Established and configured both manual and automated IVI HIL test benches utilizing Audio Analyzer, GPS Simulator, Radio Simulator, Bluetooth and Wi-Fi Analyzer, and Mobile Network Emulator.
- Enhanced testing procedures for robust validation by automating test case creation using Python scripting and streamlining processes..
- Conducted comprehensive testing across various environments, including on-vehicle, manual IVI HIL, and automated IVI HIL setups.
- Proficiently analyzed CAN logs to decode FOTA flashing sequences, optimizing firmware update processes.
- Proactively maintained system stability by utilizing CANoe to effectively diagnose faults and analyze MHU and FOTA related logs.
- Documentation & Reporting -spearheaded the gathering of software requirements with a focus on testability, completeness, consistency, and hardware- software interfaces; minimized project risks.
- Empowered team members through well-planned and executed internal training sessions (College to Cooperate, Basic and Advance Excel Proficiency), created a collaborative and knowledgeable testing environment that fostered skill development and team cohesion.

Project: Optimized Battery Management System Validation

Role: Validation Engineer

Responsibilities:

- Ensured validation of system functionalities by orchestrating the development of comprehensive test cases and scenarios for the Battery Management System (BMS) using a Hardware-in-the-Loop (HIL) test bench.
- Applied advanced analytical skills to perform in-depth requirement analysis, identified critical testing areas essential for the robust validation of the BMS.
- Cultivated a collaborative testing environment by conducting thorough reviews of test cases crafted by colleagues, provided constructive feedback, and promptly resolved any issues to enhance overall testing effectiveness.
- Executed test cases on the HIL test bench, accurately documented results and generated comprehensive reports; ensured alignment with project goals, showcased strong organizational skills and attention to detail.

CDAC Project: Remote Patient Health Monitoring System | **Platform:** Embedded System Design

Protocol Used: IOT MQTT, UART | **Software Used:** STM32 Cube ide

Hardware Used: STM32F303VC,ESP32, SENSORS (LM35 Temperature Sensor, Heart Rate ECG Sensor)

Description:

- Designed and developed a health monitoring system to track vital signs such as heart rate, temperature & so on using sensor modules, transmitted data to a remote server for remote monitoring of patient conditions via IoT technology.