

Prakash Veerappa

Technical Lead- Automotive Embedded



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Skills

- Programming Languages:
Embedded C and C++
- Microcontroller: PIC, Freescale, Atmel, NXP (S32K series), TI and STM
- IDE/EDITORS: STM32 IDE, CodeWarrior, NXP S32 Design Studio, IART Workbench, Keil, MPLAB, Eclipse, True STUDIO, Code Composer Studio and Vim.
- Operating System:
Linux, FreeRTOS, Non-Pre-emptive Tick based Embedded Platform Scheduler.
- Communication Protocol/Peripherals: UART, RS232, RS485, SPI, I2C, CAN, LIN, CAN-FD, ADC, PWM and GPIO
- Automotive Standards:
DoIP (ISO-13400) in Linux Env, SAE-J1939, ISO 14230 (KWP 2000), ISO14229 (UDS), Socket CAN in Linux, ISO 15765 (CAN-TP), CAN COM stack DIAG stack in classic AUTOSAR and Adaptive AUTOSAR.

SUMMARY

15+ Years of experience in automotive bare metal/Linux platform/FreeRTOS.

- Proficiency in Embedded C Programming especially the development of BareMetal/FreeRTOS coding for Microcontrollers and Linux Device driver development.
- Experience on working with 8bit, 16bit and 32bit Microcontrollers.
- Experience in development of low-level drivers (bare metal/Linux) and various communication protocols (UART, I2C, SPI, CAN, CANFD, LIN etc).
- Experience in design and development of DoIP (ISO 13400) stack in Linux Environment.
- Proficient in Automotive protocols such as CAN, DoIP, UDS and J1939 in Linux Environment
- Proficient in handling oscilloscopes (DSO/MSO), Protocol analysers and other lab equipment.
- Proficient in understanding the hardware design, reading schematics and board layout files of PCB.
- Proficient in preparing flowcharts and sequence diagrams for the system with proper understanding.
- Core competencies include design, development encompassing the customers business requirements
- Good experience in using vector tools PCAN, Bus Master/Bus Master Scripting, and Kvaser.
- Experience in development of CAN, CANIF, COM, DIAG Stack for AUTOSAR application.
- Experience in the entire product development life cycle.
- Experience in following the ASPICE (V-Model) process.

WORK EXPERIENCE

Technical Lead: Embitel (VW Group of Company) - Bangalore
(Jun/2017 – till date).

Module Lead: Global Edge Software Ltd – Bangalore
(04/2015 – 01/2017).

Sr. Software Engineer: Sasken Communications Technologies - Bangalore
(12/2013 – 10/2014).

Sr. Software Engineer: Larsen and Toubro Infotech Ltd - Chennai
(11/2012 – 10/2013).

Member Technical Staff: HCL Technologies Ltd - Chennai
(07/2008 – 11/2012).

Education

UNIVERSITY - ACCET (ANNA UNIVERSITY)

Bachelor of Electronics and communication Engineering -2008.

Personal Information

- DOB: 06 - 06 -1987
- Gender: Male
- Marital Status: Single
- Father's Name: Mr. Veerappa

Workshops/Trainings Conducted

- Conducted many training/knowledge sharing session to the freshers/colleagues regarding the DoIP in Linux Environment.
- Learning Program in HCL to improve personal and professional skills (T2ID –Talent Transformation and intrapreneurship development) from July 2008 to Sep 2008.
- Linux Device driver programming (with Friendly ARM and Beagle board) from Oct 2009 to Jan 2010.
- Conducted “Linux Device Driver Programming” – Hands on G2G (Globalite to Globalite) session in GESL, using Raspberry pi (which encompass coverage on I2C, SPI, UART, Monochrome LCD Display Proximity sensors, ADC/DAC, Raspberry pi and ARDUINO Interfacing, KGDB and Lauterbach debugging sessions) for a team of twenty members and uploaded the same in GESL wiki - Aug 2016

DoIP Stack (via Ethernet/WLAN) in Linux for VW cars:

- DoIP (ISO-13400) Stack Development in Linux Environment (prior implementing in Linux Environment this kind of Automotive stack exists only in Microcontroller environment) for VW connected cars in Embitel.
- Unified diagnostic services (UDS 14229) stack porting to Linux multithreaded environment and Linux DoIP Socket module development to make UDS adaptable to Linux environment.
- Integration/testing/release/maintenance of UDS, DoIP stacks in Linux Environment.

Low Level Device Driver Development:

- The low-level device driver (LDD/MCAL) development for ADC, GPIO, PWM, LIN, UART, I2C, SPI, CAN and CANFD.
- CAPL Script or Bus Master Script development to support ECU reprogramming.

Linux Device Driver Development:

- Linux Device driver implementation for sensors (like airflow sensors) via SPI, I2C so that it can readily be integrated in the ISO-13400 protocol (DoIP) which acts as a DoIP Gateway as per the customer/project requirements.
- DoIP Client Software/Packet Injector Software implementation adhering to ISO13400
- Base software package development in Linux for various sensors present in connected cars as per Adaptive AUTOSAR standards.

Ionizer Air Purifier system:

- The low-level device driver configuration for the sensirion modules which aims to sense/capture molecules floating around in the atmosphere to prevent harmful airborne particles from entering the cabin.

Cluster Porting to FreeRTOS:

- FreeRTOS configuration for the S32K312 NXP powered ECU.
- Low Level CAN driver implementation as per AUTOSAR 4.0 Compliance in FreeRTOS environment.
- Cluster's signal transmission/reception via adaptable message queues between low layer task to the application layer tasks in FreeRTOS.
- Power Mode Management implementation in S32K312 via FlexCAN Wakeup, especially for the Low power management.

Telematics Device:

- Integration of the CAN driver in Linux environment by configuring the device tree appropriately.
- Development of Socket CAN interface to enable the Linux System to communicate via CAN Sockets developed by Volkswagen.
- Application development/Integration of ISO14229 with the Socket CAN in Linux Environment.