Amol Dhumal

Embedded Software Developer

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Professional Summary

- More than 6.5 years of experience in embedded software design, development & validation.
- Experience in team handling of 10+ members & client - offshore team coordination.
- Hands on experience in embedded application & device driver development – CAN, UART, I2C, ADC, SPI, Timer, etc. for different microcontrollers.
- Good understanding of the AUTOSAR & non AUTOSAR BSW architecture.
- Experience in ADAS ECU BSW Analysis & understanding of the ADAS vehicle features.
- Good Experience in CAPL scripting & Canoe Panel Design.
- Hands on experience in embedded hardware –setup creation, board bring up activity.
- Good experience in C/ CAPL based utility development & approach preparation.
- Good understanding of the electric charging standards – CHAdeMO, DIN 70121.

Tools & Technology

- **Software:** Vector Tools (CANoe, CANape, CANalyzer, ASAP2Editor, vCDM Studio), GHS Multi, Visual studio (C, C++), CCS, TRACE32, STM32CubeIde, Keil MDK, KSAR Editor, EB Tresos etc.
- **Hardware:** RAMScope, DDT2000 diag tool, TI MCU, AURIX TC397x, RCAR-V2, RH850, ARM Cortex M4, JTAG, Lauterbach, SWD – Debuggers, Logic Analyzer, Digital Oscilloscope, Renesas E1 Emulator etc.
- **RTOS:** GHS Integrity, Osek , FreeRTOS

Experience

ADAS BSW Design Analysis Oct 2019 to Present

Tata Consultancy Services Ltd. Tokyo, Japan

- Core reallocation approach preparation & implementation for Multicore ECU (ADAS ECU).
- Designed & developed the CPU Load calculation algorithm & tool for AUTOSAR based ECU.
- Responsible for A2L creation, Par file merging & PDX file generation.
- Responsible for timely & defect free delivery of different SILS testing activities like functional, failsafe, interface, signal compare testing & BSW related activities.
- Designed & Developed C++ based converter tool for C1N to C1A-HS specification conversion.
- ADAS BSW environment setup & validation approach creation for different vehicle program.
- Worked on static & dynamic analysis of the COM stack, CPU Load, Watchdog timer, OS, Task design, memory protection, RAM-ROM consumption, CPU load with with/without FOTA
- Additional responsibilities like customer & offshore team coordination, understanding the customer requirements, supporting to the proof of concept (POC) activities.

ADAS BSW Static & Dynamic Analysis Nov 2018 to Sept 2019

Tata Consultancy Services Ltd. Pune, India

- Responsible for ADAS BSW environment preparation, Source code integration & ECU flashing.
- Responsible for the CAN stack validation. It includes CAN gateway latency analysis, Buffer overflow analysis, CAN stack parameter configuration analysis, etc.
- Analysis & validation of the Inter CPU communication.
- Responsible for the approach & test cases creation for the CAN stack validation.
- Analysis of AUTOSAR & Non-AUTOSAR based BSW ADAS ECU source code for CAN, SPI & watchdog implementation.

Wireless (CAN to Wi-Fi) Adaptor Development May 2018 to Oct 2018

Tata Consultancy Services Ltd. Pune, India

- Responsible for the Bootloader design & development for TI TMS320F280049 MCU.
- Responsible for board bring up & device driver development like CAN, UART, Timer and SPI.

CHAdeMO Protocol Test tool (CPT) Development for CHAdeMO compliant EV & EVSE Nov 2016 to April 2018

Tata Consultancy Services Ltd. Pune, India

- Mainly responsible for overall MCU firmware design & development.
- Responsible for board bring up & hardware design validation.
- Developed Applications, HAL layer & device drivers for WDT, SPI, CAN, UART, Timer, ADC.
- Bootloader design & development for TI TMS320F28069 MCU

Retrofit Adapter Development to charge CHAdeMO compliant EV using DIN compliant EVSE Feb 2016 to Oct 2016

Tata Consultancy Services Ltd. Pune, India

- Developed CAN & ADC driver development for microcontroller TI AM3358.
- Responsible for the system test case plan creation & execution.
- EV simulator state machine implementation using CAPL script.
- Played support role in various activities like board bring up, hardware testing, application development, driver development, debugging, bug fixing, testing etc.

Education

M.E.-ELECTRONICS ENGINEERING, GOVERNMENT COLLEGE OF ENGINEERING, AURANGABAD
77.00% - **2013-2015**

B.E.-BIOMEDICAL ENGINEERING, BIGCE, SOLAPUR
75.60% - **2009-2013**

Key Achievements

- TCS, India - **On the Spot Award** for the contribution in BSW project
- TCS, Japan - **Star Team award** for BSW project
- CHAdeMO & NISSAN , Japan – Appreciation received for the CPT Tool development.