Satyam Saha

Associate
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Career Objective

To acquire a responsible position where I can utilize my skills as well as my experience to contribute to the integrated development of myself and the organization's, and where I can improve my interpersonal as well as technical skills.

Summary of Experience

- 2 years of experience in working with Embedded C, C++, Linux and AUTOSAR for various automotive projects.
- Experienced in AUTOSAR, BSW Layer Development, CAN protocol, COM stack, Docker and K3S
- Experienced in working with Infineon microcontroller board (TC39x).
- Experienced in working with wireless modules like UWB (ESP32 UWB) for wireless range and data communication
- Experienced in working on Raspberry Pi 4 with Linux platform
- Experienced in SOAFEE for creating Docker container images and Kubernetes cluster deployment for applications
- Basic MCAL working experience with AUTOSAR

Educational Qualification

SL. NO.	DEGREE/ CLASS	UNIVERSITY/BOARD NAME OF INSTITUTION	YEAR OF PASSING	CGPA/ PERCENTAGE
1	B.Tech (ECE)	MAKAUT(Maulana Abul Kalam Azad University of Technology) NETAJI SUBHASH ENGINEERING COLLEGE, Kolkata	2021	DGPA - 8.51
2	10+2 (Science)	CBSE(Central Board of Secondary Education) R K S VIDYA MANDIR, Dhanbad	2017	85.33%
3	10	CBSE(Central Board of Secondary Education) R K S VIDYA MANDIR, Dhanbad	2015	CGPA- 9.6

Tools Exposure

- Experienced with dSPACE SystemDesk, EB Tresos, CEI by Siemens, UDE
- Experienced with Vector CANoe
- Training experience on Davinci Developer and Configurator

Roles & Responsibilities

- Application development using embedded C, C++ and Linux
- Created automation test setup using CAPL script in CANoe
- Created SWCs in SystemDesk
- Configured RTE in EB Tresos
- Testing on CAN communication using CANalyzer
- Created Docker images and deployed Docker containers on K3S cluster
- Implemented encryption for data transmission in UWB module

Additional Skills

- Having knowledge of SQL programming
- Having knowledge of cloud platforms like Azure and AWS
- Having working experience on Docker and Kubernetes
- Having knowledge of web development skills like HTML, CSS and Javascript
- Well acquainted with programming language C, C++ and Java
- Having knowledge of Data Structures & Algorithms
- Having multiple professional certifications like AZ-900, AI-900, SC-900, PL-900, DP-900 from Microsoft, Docker Essentials: A Developer Introduction" from IBM and "The Fundamentals of DIgital Marketing" from Google

Recent Project

AUTOSAR based development for Agricultural Machinery Manufacturer

Key points of the project :-

- Worked on CAN communication development
- Worked on COM stack development in the BSW layer after importing the ECU extract from the architecture team
- Tested Digital Output, PWM, Flex Frequency on hardware level with bench test setup
- Experienced creating DBC file for CANoe configuration to better simulate the signals
- Created testing panels in CANoe to make the whole testing experience more user interactive with the help of Graphical User Interface
- Experienced on optimizing code for better time and space complexity

- Tested different modules of the microcontroller using both code modifications and CAN signals
- Worked on BSW development in CEI by Siemens and MCAL layer development on EB Tresos
- Done smoke testing and created smoke test cases
- Updated software requirement document including system requirements

Key skills and tools used :-

- CANoe, CEI, EB Tresos, VS Code, UDE (Debugger)
- Embedded C and C++
- DBC creation using DB++ editor in CANoe
- Panel creation

Feature development for SDV (Software Defined Vehicle)

Key points of the project :-

- Development of a some/ip application which runs on Raspberry Pis.
- Showcasing SOA (Service Oriented Architecture) using service notifier and subscriber example
- Two applications were developed
    - One is to notify the distance received from the UWB (Ultra Wide Band) module which will be acting as a car's key fob
    - The other one is the subscribe application which will receive the data from the notifier and will take the decision to whether to lock/unlock the car door.
- The application is containerized using docker image which makes it portable to run on any machine and OS efficiently.
- Also the application is deployed on Kubernetes cluster consisting of different Raspberry Pis as its nodes.
- The Kuberenetes cluster is capable of load balancing the application, in case if any of the nodes goes down the container running on that node will be deployed on another node without any manual intervention thus making the whole system more reliable.

Key Skills used :-

- C, C++
- SOME/IP
- Linux
- Docker
- Kubernetes

Creation of AUTOSAR Work Package

Key points of the project :-

- Integration of CAN wakeup functionality in existing software. ECU wakeup functionality was implemented to wake up the ECU within 100ms after CAN wakeup is received
- One E2E transmit message and one E2E receive message was configured for demonstration and testing purpose
- DBC creation for E2E message
- Integrated a framework for (automated) calculation of core and task consumption
- Calculation RAM/ROM consumptions
- Automated software testing for first two points

Key Skills used :-

- AUTOSAR
- Vector CANoe
- dSPACE SystemDesk
- EB Tresos
- C++
- CAPL scripting

Declaration

I hereby declare that the information written above is true to the best of my knowledge.

Place: Dhanbad Sign

Date: 17th October, 2023 Satyam Saha