**Vamsi Chava**

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### PROFESSIONAL SUMMARY:

* Around **5 years** of experience as an **embedded software** professional and holding **master’s degree** in United States.
* Extensively worked on embedded real-time systems, software applications design, development, coding, and test engineering.
* Developed software using **C, C++, and Assembly** programming languages.
* Hands on experience in Integrated Development environments such as **MS Visual Studio, Code Composer Studio IDE, MATLAB Simulink, State Flow, MS Visio**.
* Worked on testing tools like **Canoe, CANlyzer**.
* Writing test scripts using **PYTHON, CAPL** and test plan for the product performance check.
* Experience in development of system Software Requirement **in DOORS** and Software Design document in **PTC Integrity**.
* Experienced with real-time operating systems (**RTOS)** and automotive electronic control units (**ECUs**).
* Have sound knowledge on **OpenCV** concepts and working on some of facial recognition and license plate recognition sample projects.
* Involved in creating **DFMEA** for module development.
* Experience on EMC Design Verification (**DV**) test.
* Experienced **TCP/IP** protocols to make a server client application.
* Experience various **Vehicle** and **Graphic** processors, **Ethernet** Physical chips, **Head Up devices**, ADC, LVDS and **PMICs**.
* Experienced in Hardware and Software design of **microcontroller** embedded systems.
* Excellent Knowledge of **debugging** the hardware / software modules.
* Expertise **on Module testing, Integration testing, system testing, performance testing, Inter-operability testing & Compliance testing**.
* Experienced with various communication standards such as **LIN RS232 and RS422** serial communication standard**, I2C, SPI, CAN**.
* ***As part of Process:***
	+ Applied **Functional safety** **ISO 26262** and industrial standards while writing the code to achieve effective application
	+ Followed **APSICE** process such as Design, coding, testing and bug fixing during development.
	+ Involved in **project management** techniques for releasing Software to the testing team such as verify the SW met all process criteria like code review, unit testing, integration testing, what are the features added to this SW and what are the bugs got fixed, know defects then making release note.
	+ Involved in creating **checklist** for SW design, coding and testing prior to baseline.
	+ Conducted weekly, daily **standup meetings** to track the project status and create the task assign to the responsible team member to speed up the process and estimate the manpower and tracing the bugs, upcoming features going to be delivered in next releases.
	+ Attend for internal **ASPICE** audit to verify does SW reaching all required process or not. For example, does SW got freeze and performed all tests before releasing to validation.
	+ Interacted with **OEMs** team to give the SW demo and help them to setup the prototypes, observed the defects, reproduced and assigned to the responsible person in the team.
	+ Supported **DRE** activities at customer location such as, negotiate the specifications, give the SW demos of different phases and provide feedback to development team, debug the code and fix the issues and follow up with the development team to meet the deadlines.

### EDUCATION:

1. **Executive master’s in information systems security** (***Cybersecurity***)

 University of Cumberlands – (2020 – Pursuing), KY

1. **Master’s in electrical engineering**

Gannon University – Erie, PA, USA.

GPA – 3.6/4.0.

1. **Electronics and Communications Engineering**

Bachelor of Technology from JNTU, Hyd, India.

GPA -3.5/4.0

### PROFESSIONAL SKILLS:

**Languages and Scripts:** C / C++, Python, C#, Embedded C, MISRA-C, Perl, CAPL

**Hardware Platforms:** PowerPC**,** MIPS, x86,ARM, RCM2200, Rabbit Processors,8051, LP87563, BCM 89811, Rcar E3, V850.

**Protocols:** CAN, LIN, I2C, SPI, UDS.

**Tools:** GHS Multi**,** Emulator, Simulator, QAC, ECAD, Makefiles, Debugger, Jira, MS Visual Studio, Eclipse, GDB, JTAG, TRACE-32, VSS, CVS, CANOe, MATLAB, LabView, Microwind, LT Spice, P Spice, Xilinx ISE, Electric EDA, VoltLab, PCB design, DOORS, ECU.

**Embedded OS:** QNX, VxWorks, RT Linux, Nucleus, WinCE, GHS.

### PROFESSIONAL EXEPERIENCE:

**Role: Embedded Software Engineer Jan 2020 to Present Client: Marelli Auburn Hills, MI**

**Responsibilities:**

* Involved in software development for SLM and BCM.
* Analyze the requirements and prepared the design documents.
* Hand-coded algorithms using C/C++ programming language.
* Worked on Cybersecurity and bootloader implementation by developing secure Boot.
* Involved Bootloader, clock initialization and BSP configuration for RH850 micro.
* Worked automotive smart lighting module to control the front lamps leveling based advanced axil control technique.
* Involved in Welcome and departure animations for latest vehicles.
* Involved in secure features for Motorcycle keyless entry.
* Worked on SPI communication protocol to carry the information from Vehicle processor to control LED drivers and motor.
* Created Software functional specifications from customer requirements and develop the pseudo code, flow charts, mentioning any preconditions, fail safe conditions and decide the memory usages etc. to make Developer to make the application effectively.
* Created memory map for usage for program memory and secure boot. Develop the code to calculate the check of program whether SW flashed properly or breadboards.
* Involved in SDLC process like requirement analysis, designing, coding, testing, releasing and providing maintenance, and documentation at each stage.
* Writing test Case in IBM rational DOORS.

**Environment:** C/C++, V Model, CAN, SDLC, Autosar OS, Multi, Canoe, RTC, IBM, I2C, Integrity, CS++, DFMEA.

**Role: Software Design Engineer Nov 2017 to Jan 2020 Client: N.S International – Troy, MI**

**Responsibilities:**

* Involved in software development for IPC.
* Analyze the requirements and prepared the design documents.
* Have used Renesas/ARM controller for the IPC development.
* Hand-coded algorithms,Datastructures using C/C++ programming language.
* Developing application software using C/C++.
* Experienced on integration of 3rd party SW such as Altia, Renesas and etc.
* Worked on Cybersecurity and bootloader implementation by developing secure algorithms.
* Configured the Windows manger and TFT register to apply color correction.
* Worked on SPI communication protocol to carry the information from Vehicle processor to Graphical processor.
* Created Software functional specifications from customer requirements and develop the pseudo code, flow charts, mentioning any preconditions, fail safe conditions and decide the memory usages etc. to make Developer to make the application effectively.
* Used I2C protocols to control the register settings of PMIC, ADC, Hyper flash and PMICs
* Performed code reviews and Design reviews to meet the ASPICE standards.
* Coordinating with offshore team regarding features and help them to setup the protype and make them understand how flash the PCB, bread board with different type flashing techniques.
* Interacted with Customers regarding Software issues and Software changes also interacted with other department such as Mechanical, Hardware team.
* Created memory map for usage for program memory and graphics. Develop the code to calculate the check of program whether SW flashed properly to PCBs or breadboards.
* Worked on TCP/IP protocol to create a server and client application to check the ethernet status of IPC.
* Experience on creating Design failure mode analysis DFMEA
* Worked Manufacture mode, Diagnostics Module and DV test modes.
* Involved configured the project for multi variant and release the SW for customer.

**Environment:** C/C++, V Model, CAN, SDLC, Integrity OS, Multi, Canoe, Altia, Diagnostics, Integration, PTC, I2C, Integrity, SVN.

**Role: Software Validation Engineer Feb 2017 to Nov 2017 Client: Quantenna Communications - Fremont, CA**

**Responsibilities:**

* Analyze the requirements and created functional and test specifications.
* Captured customer requirements, analyzed documented and generated high level functional specifications.
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* Performed manual and automated testing.
* Performed DPRS (Diagnostics performance requirements standard) test on ECU's
* Identified software issues and transferred the issues into the issue tracking system with supporting log files and data
* Recorded, processed and analyzed data with PC based tools and test instrumentation
* Performed setup of modules/wiring and maintained test benches and test vehicles appropriately
* Validated and verified all embedded software functions according to functional specification and customer requirements
* Release official software to different teams, customer and manufacturing facilities
* Provided field support to integration and Quality assurance teams to identify root cause of issues.

**Environment:** C/C++, Canoe, Python, CAPL, MATLAB/Simulink, CAN, SDLC.

**Role: Intern Embedded Test Engineer May 2016 to Dec 2016**

**Client: PerigonSoft, Columbia, MD**

**Responsibilities:**

* Developed communication protocol to communicate between Cluster and PC.
* Worked on Testing the complete functionalities related to HMI like peripherals, vehicle history and Functionalities which are related to Infotainment system like FM Radio, USB, IPOD connection, SD card connection to Car Infotainment system
* Validate the test cases and Automation of test cases using CAPL scripting
* Code review at meetings and ensure correct implementation and follow-up on any concerns.
* Dynamic modeling and analysis, Numerical simulation using MATLAB and control system design for a simple project.
* Developed various specifications such as (CANbus, test specifications, product requirements, and test procedures).
* Validated the control logic and CAN communication using CAN bus monitoring software named CANKing.
* Updated the data in DOORS by importing, and reviewed these requirements by exporting and familiar with Aspice.
* Activities involve Development, Design, Code, and Bug fixes, Code Optimization, Debugging and Manual Testing.

**Environment:** CAN Sniff, DOORS, CANBUS, Linux, HMI, CAN Analyzer,MATLAB /Simulink, C/C++

**Role: Associate Engineer Dec 2013 to Jun 2015 Client: Argus Embedded Systems Pvt. Ltd - Hyderabad, Andhra Pradesh**

**Responsibilities:**

* Provide technical support in design and development of embedded systems.
* Worked on keil 4.0 for programming in embedded c to develop output and load to hardware by Flash magic tool.
* Supported all phases of the software development process i.e., Requirements, Design, Development
* Worked on ECG display on smart network project.
* Hands on experience in Microcontrollers, Microprocessors, Analog and Digital Communications, RF filter analysis in LabVIEW.

**Environment:** C, Advanced C, C++, TCP/IP, Embedded Linux, RTOS, Bluetooth, LabView.

### ACADEMIC PROJECTS:

**Huffman Coding Project,** Fall 2016 **Gannon PA**

* Implemented code for the encryption and decryption based on the Huffman coding
* Developed GUI in MATLAB
* Run the code and sent and receive the data securely
* Resulted Graphs are plotted by using the MATLAB.
* Calculated the MSE and PSNR values using Validation.

**Control of Vehicle Project,** Spring 2015 **Gannon PA**

* Simulated integration of DC micro grid; operational optimization was plotted using MATLAB and Simulink
* Calculated the gain values (Kp, Ki, kd) and transfer function using vehicle suspension plant
* Designed PI and PID controller to control the vibrations in vehicle in closed loop response
* Tested the designed system using MATLAB and Simulink in both open and closed loop

**Wireless Control System Project,** Fall 2012 **JNTU Hyd**

* Develop the code in Embedded environment.
* Fixed the tools and Microcontroller on the PCB.
* Execute the code in the ISP software.
* Dump the Required code into the Microcontroller by using the Keil software.
* Tested with the Bluetooth Android devices.

**Embedded Systems Project,** Spring 2012 **JNTU Hyd**

* Built the sensors, tools and Microcontroller on the Express PCB
* Implemented the required embedded code
* Run and test for the results
* Dump the executed code into the Microcontroller By using the Keil Software.
* Verified the results