**Sarathchandra Kuntamukkala**

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**SUMMARY:**

* 3+ years of experience in the field of Automotive Embedded Systems.
* Experience in Analysis, Design, Development, Testing of Embedded based applications.
* Experience in basic Electronics Validation, **debugging and troubleshooting.**
* Knowledge and Expertise validating **Brake** ECU Controller
* Involved in Developmental activities on **Autonomous Brake Module**
* Superior Expertise in Microcontroller and Microprocessor based product development.
* Thorough understanding of Object-Oriented and formal development methodologies.
* Experience with **MATLAB, Eclipse IDE, Simulink/State flow** to stimulate hardware behavior.
* Proficient in **ANSI C, MISRA** code check standard, **CAN communication** and diagnostics.
* Experience working on vector tools (**CANalyzer, CANoe, VTest Studio).**
* Experience on **HIL and IN-Vehicle** Test Environment.
* Experience using simulation and analysis tools including editors, compilers, linkers, debuggers, code analyzers, version control systems, software testing tools.
* Experience in performing safety management activities for Active Safety according to **ISO 26262** standards during all project phases.
* Familiar with evaluating Failure Mode Effects Analysis (**FMEA**), Risk and Hazard analysis.
* Good knowledge of software development lifecycles and testing processes.
* Good knowledge of Requirement management tools (**DOORS, MKS**)
* Experience with electronic equipment like power supplies, Oscilloscopes, Multimeters and ability to troubleshoot firmware and electrical issues.
* Knowledge of hardware design and failure modes in electronic modules
* Knowledge of Vehicle Electrical Systems and Serial data communication
* Demonstrated proficiency in both written and verbal communication

**TECHNICAL SKILLS:**

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| **Hardware** | 8/16/32-bit Microprocessors and Microcontrollers (STM32F4, Intel 8051,8086, ARM & TI Instruments), Peripheral devices (SPI, I2C, UART, RS232, ADCs, DACs, PWM). |
| **Communication Protocols** | CAN, LIN |
| **Programming** | MATLAB, Embedded C, #C |
| **Design & Simulation** | Simulink/State flow, CANoe, CANalyzer |
| **Scripting** | Python, CAPL, vTEST studio |
| **IDEs** |  Eclipse, MS Visual Studio. |
| **Software Tools** | MS Office, SABER, Xilinx, CADENCE, Verilog, and VHDL, DATALYZER, XMIT. |
| **Systems** | Windows, Linux, iOS |
| **Other** | Code Generation with Targetlink, IBM Rational Doors, Synergy, DSPACE system, GIT, Jira. |

**PROFESSIONAL EXPERIENCE:**

**Alten USA, Inc. Aug 2018 To Mar 2021**

**Systems Test Engineer (Dec 2019 – Dec 2020)**

* Execute Hardware, Software and Vehicle level system performance testing and data collection on **SAE L4 Autonomous** Vehicle Braking Systems for multiple new features.
* Responsible for test bench set-up which includes data acquisition software, sensor configuration, and CAN wiring schematics as well as troubleshooting system issues.
* Working with internal algorithm and software engineering teams to provide engineering and developmental support in making the most robust **A-Brake** product for the customer and in charge of maintaining the internal issue list for the project.
* Analyzing the Requirements and writing test cases according to the objective.
* Planning the test strategy and executing testing of all the test scenarios.
* Automating and executing the test cases using **CANoe** and **VTest Studio** tool.
* Retesting the failed test cases after Software code change to ensure defects are fixed.
* Supporting other global teams in testing activities and in understanding of **A-Brake** concepts.

**Environment:** HIL Bench, CAN Case 1640A, CAPL Scripting, CANoe, VTest Studio, Parad, Sigma, PROXI tool, DET.

**Validation Development Engineer (Aug 2018- Nov 2019)**

* Execute Hardware level System Performance testing and data collection on Electro hydraulic Braking Systems for multiple OEM’s carryover features.
* Prioritize Customer Requirements and consolidate them with release schedule.
* Performing Manual test activities on HIL Bench using tools such as **CANalyzer, XMIT, CANCMD.**
* Compiling and analysis of test results using data acquisition system tools such as **DATALYZER.**
* Analyzing the CAN logs and Datalyzer traces to find the problem in the Customer Requirements and creating reports.
* Debugging the issues using a logger and Participating in review meetings with Development team to do root cause analysis.

**Environment**: Datalyzer, CANalyzer, XMIT, CANCMD, Ford’s Diagnostic Engineering Tool, Catch, MKS Integrity Tool.

**Novi IT, Inc. Oct 2017 to July 2018**

**Junior Embedded Software Engineer**

* Involved in working with **camera, lidar,** and **radar sensors** for **Active Safety Systems** to monitor the environment and detect potential threats.
* Worked on Low speed, High speed, and Pedestrian systems.
* Validate Body EE System Features of Different Vehicle Variants on a dSPACE **Hardware-In-The-Loop (HIL**) simulator using a combination of internally/externally developed plant models
* Automate tests in dSPACE Automation Desk Validation Framework by defining the library blocks for carrying out body EE system level tests.
* Involved **in-vehicle /Bench testing/log creation, analysis, reporting, and validation.**
* Identify the attributes of Hardware signals, defining **sensor/actuator** interfaces, Debugging ECU interfaces, and defining signal conditioning requirements.
* Worked on CAN connectivity testing and troubleshooting.
* Perform diagnostics tasks **on ECU’s compliant with Ford’s ISO 14229** based diagnostic specs.
* Experience in software flashing procedures which includes **eFlashin**g using **Renesas** Debugger and using the Diagnostics Engineering tool.
* Support Commissioning team in the development and maintenance of the test environment, including changes to the hardware set up, wire harness and any associated equipment.

**Environment:** Embedded C, CAN, Vector Canoe, CANalyzer, dSPACE AutomationDesk 5.0, Ford’s Diagnostics Engineering Tool v6.6.0, Green Hills Compiler, Minicab Renesas Debugger, and Serena PVCS.

**EDUCATIONAL QUALIFICATION:**

Masters in Electrical Engineering Jan 2016- July 2017 WRIGHT STATE UNIVERSITY GPA: 3.3/4.0

Bachelors in Electrical & Electronics Engineering Aug 2011-May 2015

ACHARYA NAGARJUNA UNIVERSITY GPA: 7.59/10.0

**ACADEMIC PROJECTS:**

**PID controller for a Model Car**

Tools: MATLAB/Simulink

* Understand and harness the physics behind any Electric Car
* Establish the Mathematical Model of an electric DC Motor and Derive the Mathematical Model behind the dynamics of a car
* Implement an engineering model in Simulink using blocks, transfer functions, MATLAB functions, etc.
* Implement, test and tune a PID controller adapted to your requirements to control the output of your stream.

**EcoCAR: Systems Modeling and Simulation (SMS)**

Tools: MATLAB, Simulink, State flow, GT-SUITE, DSPACE software and Autonomic

* Managing vehicle model versions and change control
* Creating software-in-the-loop and hardware-in-the-loop models for testing controller algorithms
* Optimizing fuel economy and driving performance through vehicle modeling
* Engine modeling through GT-SUITE and Simulink

**Certifications**

* Workshop on Industrial Automation - PLC & SCADA Sept 2014
* Professional Embedded Systems training Sept 2017