Prudhvi Chekuri

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# PROFESSIONAL SUMMARY

* Around 3 years of experience in automotive industry as Embedded Electronic system engineer in development & testing.
* Experience in Automotive Feature Integration, test automation, debugging and validation.
* Responsible for gathering requirements and creating Engine feature specifications Large Mining Trucks
* Experience in Hardware in Loop (HIL) testing, analyzing test results in Vector CAN tools with dSPACE Control Desk and Automation Desk for multiple engine applications with varying Schematics, Pinouts, and Wiring Harness
* Experience in modelling and validation using MATLAB/Simulink.
* Knowledge in maintaining requirement documents, developing test scripts, preparing Test plan and Test reports
* Expertise on building harness for machine applications.
* Proficient in Effective Root Cause Analysis and identifying Bugs during test execution and reporting by using the Bug Reporting Tools.
* Expertise in utilizing data acquisition tools like CANape, CANalyzer, CANoe and MRET test equipment along with Simulators to execute tests.

# PROFESSIONAL EXPERIENCE

**Automotive Robotics Inc. East Peoria, IL:**

ARI is a leading provider of integrated engineering solutions and a market provider leader in engine and power testing.

**Designation: Systems Engineer I**

**Project: Work Tool Translator for NGH Machines (April 2020-Present)**

* Developed a translator ECU Control Software using MATLAB/Simulink, which will translate the J1939 proprietary messages coming from the third-party ECU controller into CAT proprietary messages for changing the configurations on the CAT machine ECU’s
* Performed FMEA analysis and worked closely with control System Engineers to create HIL test plans and worked on updating ECU’s software.
* Simulated the 3rd Party ECU Using CAPL scripting.
* Designed, and validated MATLAB Simulink models for interfacing to Hardware in Loop (HIL) system hardware
* Built harness for dSPACE bench setup based on the design requirements.
* Supported regression tests by creating test plans and test procedures.
* Responsible on development of test scenarios for machine applications.

**Project: Port forwarding Test on A6N2 ECM**

* Configured and tested PCs Connected to ECM to redirect a communication request from one address and port number combination to another while the packets are traversing a network gateway, such as a router or firewall for Post forwarding application.
* Setup PCs with Linux OS to establish communication for requesting data from one PC to another using Ethernet communication protocol and configured WAN and LAN ports for A6N2 ECM.
* Tested the port-forwarding feature using Netcat utility to monitor the data transfer across network connections.

**Project: Large Mining Truck Engine Application (Aug2019 –March 2020) (Client: Caterpillar)**

Experience on building, integrating, and validating engine software files with manual and automation testing for Large Mining

Truck Applications.

* Experience working on Current Product Innovation and New Product Innovation that goes into engine software and building the Engine software with different Emission standards, Ratings, and power to meet all the customer requirements in that specific region or country.
* Responsible for analyzing and documenting reports prior to every engine flash file release for Large Mining Truck Engines
* Performed unit testing, feature testing for both Engine and after treatment software to meet all the customer requirements.
* Experience setting up testcases and troubleshooting the test benches for different engine applications without any diagnostics and events.
* Experience in providing quick production support to customers and engineers in the test cell by comparing simulation results to measured test data from labs and engines for validation. Differences are analyzed with the root cause to the problem and reported with the corrective actions to address the issues.
* Performed testing for CAN communication using dSPACE, Control Desk, Electronic Control Unit and CANape.
* Tested the CAN data with ON vehicle testing, and logged data using Vector CANape with OBD II connector.

**Project: UNAC Railroad Excavator (April 2019-Jul 2019)**

Conversion of Cat Composure Software Architect blocks to Simulink Modelsusing MATLAB

* Understand the Test requirements for the UNAC application
* Developed the Simulink models for Safety outputs, Display tx interface, Hydraulic all stop block features for UNAC applications.
* Performed model advisory checks for memory improvement and reach efficiency.
* Develop the python test automation framework for all the machine applications
* Meticulously worked on Hardware-in-loop (HIL) testing of automotive diagnostics and IO processing software on dSpace Simulators using Canape, Canalyzer.

**Project: OEM Interface Module Software (Jan 2019– Apr 2019)**

Replacing the Tier-3 Engine of the Excavator machine with Tier-4 Engine. Implemented the features to control Engine Speed through Engine Speed Command, Throttle Backup mode and One Touch Low Idle (OTID).

* Developed the software models for the requirements.
* Analyzed the requirements and prepared test procedure and testcases manually.
* Executed test cases based on functional specifications and provided defect reporting and tracking. Delivered the developed, executed, documented scripts/procedures to client.

**Project: Developing and Testing the Features of Multifunction Integrated Control System (MICS)**

**(Oct 2018 – Dec 2018)**

* Developed the features Automatic Lubrication Control System, Hoist Warning System, Low Coolant Warning System, Low Hydraulic Oil Warning System, Engine Idle Timer Control System, Low Steering Oil Warning System to alert the operator.
* Performed checks on such as Signal Propagation, Data length check, Message absent check, Transmission rate check to ensure proper transmission and reception of CAN frames for the above features.

**Project – Developing and Testing the IO(Inputs/Outputs) application (Aug 2018 – Oct 2018)**

* Developing the application to categorize the Analog, Digital, Pulse width modulation Inputs and Outputs using J1939 communication blocks to transmit and receive the data.
* Performed checks on such as Signal Propagation, Data length check, Message absent check, Transmission rate check to ensure proper transmission and reception of CAN frames for A5M7 application

# ACADEMIC PROJECTS

**POCKET DEFIBRILLATOR USING GSM**

* The project aims in designing a pocket defibrillator which can give shocks to a human heart which has stopped working suddenly. The system also facilitates by sending alerting messages to the doctors or take care persons when the person gets any sudden heart rate increased or decreased.
* The sensed heart rate is fed to microcontroller by heartbeat sensor. The processed information is sent to the doctor in the form of an SMS through GSM Modem.

# EDUCATION

University of Bridgeport Bridgeport, CT

**Masters in Electrical Engineering** GPA 3.5 **May 2018**

VNR Vignana Jyothi Institute of Engineering and Technology Hyderabad, India

**B. Tech in Electrical and Instrumentation Engineering** GPA 3.3 **May 2016**

# TECHNICAL SKILLS

* **Software Tools**: ControldeskNG, ConfigurationDesk, AutomationDesk,Matlab, Simulink,Vector CANalyzer & CANape, Lauterbach TRACE 32 debugger, CAPL Scripting, ATI Vision, Matlab/Simulink, Visio.
* **Protocols:** CAN, J1939
* **Testing Hardware:** dSPACE MRET, dSPACE Simulator
* **Languages**: C, Python
* **Version contro**l GIT
* **Certifications:** Six Sigma White belt, PLC, SCADA