



## ILLENCHERAN VAIRAPPAN

HIL Validation Engineer

### Total Experience-

5.3 Years

### Employment History:

- Feb 2019 to Present: Engineer in L&T Technology Services, Chennai. (Client: Caterpillar)
- Jul 2016 to Feb 2019: Software Engineer in HCL Technologies, Chennai. (Client: Caterpillar)

### Products & Customers handled:

- CAT-CWL (Compact Wheeled Loader), WHEX (Wheeled Excavator), TTL
- CWL- Longbow and Crossbow Integrated Multi-App Bench Setup
- Working in an CWL EV Bench Setup Taser

### Key Responsibilities:

- Setting up the dSpace Mid-Range Simulator/Scalexio Hardware for our test Specifications
- Develop Automation Desk Sequence in python for Regression
- Understanding Harness and preparing the mapping sheets for dSpace simulator
- Working on dSpace Tools like Control Desk, Automation Desk
- Worked on Vector Tools like CANalyzer, CANoe, CANape
- Worked on Open loop HIL setup and Closed loop HIL
- Worked on Automation Testing and Manual Testing
- Working in Automation environment like Automation desk, CAPL if required for Display
- Preparing Sequence using Library functions in python for Automation Desk
- Analyzing SRS and Preparing Test Plan/ Test cases.
- Creating MATLAB Simulink Models for Simulation and Identifying failures in Regression using Automation Desk
- Knowledge about SDLC and Software Testing Types
- Hands-on experience in Black Box Testing (Functional Testing, Regression Testing, Acceptance Testing)
- Knowledge about Issue Tracker like JIRA

### Academia:

M Tech Automotive Electronics in BITS, Pilani Class of 2021-2023  
B.E in Electrical and Electronics Engineering from Karpagam College of Engineering Coimbatore. Tamil Nadu  
Completed Higher Secondary from Kurinji Higher Secondary School, Namakkal. Tamil Nadu

### Personal Info.

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**Languages:**

English: ☒ ☒ ☒ ☒ ☒  
Tamil: ☒ ☒ ☒ ☒ ☒  
French: ☒ ☒ ☐ ☐ ☐

### Skill Set:

- Control Desk, Automation Desk, Configuration Desk
- CANalyzer, CANape, CANoe
- Python, C
- dSpace
- UDS
- J1939, CAN

### HIL Benches Worked

- Dspace PHSType
- Dspace Scalexio
- NI Fast

### Projects in Detail:

**CAT CWL (Longbow and Crossbow) - Machine ECM** Duration of the Project: (Feb - 2019 – Present)

**Skills:** Hardware in the Loop Testing (Black Box Testing, Regression Testing)

**Description of Project:** CWL Compact Wheeled Loader is a Vehicle used to load and carry compact sized objects and it is small when compared to MWL Medium Wheeled Loaders. I cover the full functionality of Implements and Transmission in this machine and sometimes with the A6E11 Machine ECM also.

**CAT WHEX (Wheeled Excavators)** - Wheeled Excavator is used for the Excavation purpose and also to drive it on the road for the easy mobility. Machine ECM (B6M5) will be the complete responsible for the Implement actions, Transmission and Body control of the Vehicle.

**CAT TTL (Tractor Type Loaders)** - Tractor Type Loaders is used for road pavements Constructions etc. Machine ECM will be the complete responsible for the Implement actions, Transmission and Body control of the Vehicle.

Roles and Responsibility is same for all the 3 Projects which mentioned above

### **Roles and Responsibility:**

- Setting up the HIL Bench Hardware and making wire Harness for the bench
- Developing MATLAB Simulink Environment Models and also Plant Models for the Simulation of I/O required
- Developing a Test Case for the Black Box Testing with the Help of System Requirement Spec (SRS) along with the Failure Insertions
- Manual Testing the Test Cases with the help of Vector Tools, Control Desk and Diagnostic Testing (Both Open Loop and Closed Loop)
- Automating the Test Cases with the help of Automation Desk and Reporting the Defects to the software team
- Regression Testing for Every 15 days with the developed Automation Desk Script for identifying failures in the new release.