

Prasanth Davuluri

Education

Master of science with specialisation in software engineering from Birla Institute of Technology and Science University, Rajasthan, India- 2016

Bachelor of Science with specialisation in Electronics and Computers from Acharya Nagarjun: University Nagarjuna Nagar, A.P, India -2011

Projects

Validation Automation for CAN based Automotive Embedded Systems

Thesis

End-to-end automation is the need for all the industries in this era. It is need of error-free, fast, time bounded and cost-effective testing for any application with the help of automation. The product owner can rest assured of quick, reliable, and quick results. Multiple execution can be done including overnight execution if automated validation solution exists for a product. For specific testing simulation like CAN based vehicle environment, developing automation can be costly. A necessity for cost effective testing is necessary for benefits of the organization.

Affiliations

13+ years industry experience in Embedded Systems Functional Specification maturation, Software Model design MBD Approach, AUTOSAR, NI LABVIEW & Test Stan Automation, MIL, SIL, HIL Validation, Software Integration and Maintenance in Automotive Domain. Worked in Wipro for 5.5 years and then joined in Tata consultancy services continued till now. Domain knowledge on various areas in Automotive features (Bluetooth, Diagnostics, Voice Recognition, CAN, Audio, Media, Electric steering column lock, Interior Lighting, Exterior Lighting, TPMS, Ambient lighting, Body control Module, Powertrain Control Module and CAR internal features).

Experience Summary

- In-depth understanding of Automotive domain with consideration of HW level, Supplier developed base SW and Vehicle level aspects.
- Expert in reusable Model based logic design for multiple ECUs which can be re-usable across various vehicle platforms or market continents for software and hardware cost reduction.
- Experience of developing MIL, SIL & HIL Manual & Automated Test suites for Body Control Module, Infotainment based on understanding of architecture.
- Prepared test plans and Software Integration testing for various BCM features.
- Experienced in Automation Architecture with National Instruments hardware and development of automation testcases in LabVIEW/Test stand.
- Creation of Test data, Test specifications, Test Schedule, Test setups/Bench.
- Successfully handled 5000+ test suites which are included in different features, along with development, regression execution
- Experienced in testing Diagnostics module with UNIFIED DIAGNOSTICS SERVICES (UDS)
- Experienced in testing connectivity module with latest technologies like Dual phone (Handling two HFP profiles), Apple CarPlay, Auto Android & Baidu apps.
- Hands on experience on product Integration & Test cycle with involvement in Requirement gathering, Test case design, Build Pre- Integration, Integration Testing & System testing
- Tools used GIT, JIRA, RTC, SVN, IMBUS Test Bench, NEO VI tool and DET (Diagnostics Engineering Tool), Test stand, FTIDE.
- Expert in Test case design, Test case execution, Failure analysis, Defect creation and Defect reproductions etc.
- Conducting moderately complex tests and documents, summarizing test results/ conclusions, verification of test accuracy based on this determining the additional testing if needed based on results
- Having experience on working automation tools (client proprietary) for testing diagnostic modules.

Areas/Applications

- **Model Design for Automotive ECU**

- Electric steering column lock: The electrical steering column lock includes a bolt that is intended to move for locking and for unlocking the steering column based on Door unlocking, Key ignition, ABS Speed.
- Interior Lightning: Lightning feature based on different activities in car from coming near to the car till start driving and controlling all the lightning module.
- Exterior Lightning: Lightning feature based on different activities exterior to the car from start driving and controlling all the lightning module like Head Lamp, Signal indicators, Position lamp, Doot handle lamp. Approach lightning etc.
- TPMS: Tire pressure monitoring system help the user to indicate the tire pressure and its warning indicators.
- OTA: Over The Air software update over the air without any dealer or service interactions.

- **Automotive Infotainment**

- **Bluetooth Phone/Media:** Bluetooth is a short-range wireless technology standard that is used for exchanging data between Car infotainment and connected mobile device.
- **Diagnostics:** A digital analysis of your car's various computer systems and components Car diagnostic tests scan your car's components and systems to check for issues with components.
- **Voice Recognition:** Voice and speech related commands to perform specific activity within the car infotainment. i.e., Call John to initiate call without any touch activity
- **Navigation:** To provide the route information and respective details inside the car
- **Audio:** Audio module that is used across the applications in car
- **Radio:** AMFMDABSDARS
- **Media:** Media player app that is used to play different types of media from the sources like USB, CD, DVD, Memory cards, Online
- **Auto droid:** Interoperable app used in car infotainment to connect between the car and Android OS phone.
- **Car play:** Interoperable app used in car infotainment to connect between the car and IOS OS phone.

- **Baidu:** Interoperable app used in car infotainment to connect between the car and iOS and Android OS phone in only China location.
- **In Car applications**
 - **Ambient lighting:** Ambient lighting is the soft illumination around the car's centre console, door handles and pulls, cupholders and sometimes completely across the dash and in the vehicle's footwells.
 - **Eco Data:** Vehicle fuel efficiency information, Tips to be followed for efficiency, breaking and acceleration graphs are displayed In HMI screen.
 - **WADE SENSING:** Car driving in some limit of water level and such related data is available in HMI screen.
 - **Camera:** Front, Rear, 360-degree camera that helps the driver in visibility and driving.
 - **Park Assist:** Assist to the driver for different kinds of parking like parallel and perpendicular.
- **Automation**
 - **Object Verification:** To verify HMI (Human machine interface) by performing Gray scale. Image processing etc.
 - **Touch Simulation:** To perform automated touch in HMI without any human interactions.
 - **OCR:** Optical character recognition to perform Grammar errors, Spellings, other texts in HMI.
 - **Audio Verification:** Audio validation from the speaker output.
 - **External device communication:** External device connection and disconnections like USB/Mobile phone etc... through automation.

Computers Worked on

Computer System	Programming Languages	Special Software
Windows 10,11	Model Design	MATLAB, Simulink, State flow, M-Script, MS Visio NI LabVIEW
Windows 7,10	LabVIEW	NI Test Stand
Windows 7,10	Test Stand	Code Based Development
Windows 7,10	C Language	

Career Profile

July 2021 - Present

Tata Consultancy Services

Title	Power Train
Period	In Progress
Client Name	STELLANTIS
Position	End of Line Validation Engineer
Manager	Rajendra Saindane & Gokul Tayade

Responsibilities

- Power Train HIL Validation
- Diagnostics Validation for Power Train
- EOL Validation for Power Train

Coaching and Mentoring

July 2021 – June 2025

Tata Consultancy Services

Title	FORD Body Control
Period	Since August 2021
Client Name	FORD
Position	Senior Developer
Manager	Neeraj Chaudhary, Amol Kurkute, Anup Gadkari & Shobha Patil

Responsibilities

- Band width estimations
- FS and Model Development, Testing & Review
- Coaching and Mentoring
- Thought Leadership / Process Improvements
- Technical Leadership
- Delivery & Quality Assurance
- Release package ownership
- Matlab Model Development
- Code Generation
- MAB Guidelines/Polyspace/Sonarcube

- CICD Pipeline
- Software Component Development and Validation
- FUSA Feature Implementation
- Autosar & Non-Autosar Architecture implementation
- MIL/SIL/HIL Validation

Project The Vehicle controls division of Ford Motor Company is responsible for the development of Body Module ECUs (Electronic Control Unit) like BCM, Door Control Unit, Rear Gate Trunk Module, Driver Seat Module, Power Tailgate Module, Power Running Board, Trailer Lighting Module. These modules control specific functions of the vehicle operation.

Ford Vehicle Controls division defines the requirements of Body Control Module ECU features Those are Interior lighting, Exterior lighting, Locking, Alarms, Tire Pressure Monitoring System (TPMS), Vehicle Starting Control (VSC) and Electric Steering Column Lock (ESCL). All features operated by BCM are closely _ associated with vehicle security, user experience, comfort, convenience in operating vehicle. TCS develops feature functional specifications and behavioural models as design artifacts for these feature requirements. Tier 1 suppliers use behavioural model for software development of ECUs. These ECUs are components of Ford Lincoln vehicles electrical /electronic systems to operate designed features.

Carried out the following activities:

- Handling the FS Development, Model development, Feature integration and MIL execution, Creation of final delivery artifacts
- SWC Development, MIL/SIL/HIL Validation, CICD Pipeline, MAB/ Polyspace/ SonarCube code checks.
- Analysing the functional specification and requesting the changes before model implementation based on high level requirements
- Assigning the work with team members and reviewing the completed work activates and providing the reviews comments and suggesting the required changes.
- Issue tracking. Release tracking without any slippage
- Providing the estimated efforts for the upcoming releases and adjust down the releases based on the available bandwidth without impacting the deliverables,
- Analysing the new implementations for Issues and providing the estimated efforts with the clients based on the requirement count, Complexity of the models & available team bandwidth
- Generate effort reports with details of task wise man hours efforts for executed release package of BCM FS Models.
- Plan and execute training sessions for new onboarded experienced professionals and fresh engineering graduate team members.
- Guide and mentor team junior members from a technical perspective to ensure quality delivery of the components.
- Monitor and maintain resource numbers as per the submitted estimation to the customer for execution of BCM project from offshore.
- As per nature of work for each BCM feature team set clear, challenging but reasonable performance goals for the team. Monitor performance of each associate and provide intermediate feedback when required for personal growth of associate and growth of

organization

- Conduct annual performance appraisal for BCM team as per organization policies and guidelines. Share the annual performance feedback and ratings with associates.
- Submit promotion recommendations for good performing associates for the individual and organization growth.
- Create reusable assets/ supporting artifacts based on the industry landscape.
- Identify/ evaluate opportunities for project Improvements and implement them for the project.
- Understand interdependencies of the BCM feature components in work packages that are being developed.
- Troubleshoot critical technical issues where understanding of software and embedded hardware interactions is involved.
- Handle escalations related to critical technical issues reported by tier one supplier/ customer or TCS Offshore BCM Feature validation team.

Hardware	Zonal Hardware
Operating System	Windows 10
Languages	MATLAB, Simulink, State flow, M-Script
Special Software	FTIDE, MS Visio, MS Access
Project Location	Pune, Mumbai, India & Rotunda Dr, Dearborn, MI, USA

Feb-2021-Jul-2021

Tata Consultancy Services

Title Lucid

Period Feb 2021–Jul 2021

Client Name Lucid Motors

Position Senior Developer

Responsibilities

- Architecture Design
- Development
- Integration
- Testing

Project To build a complete automation architecture Setup along with NI hardware for testing complete lucid infotainment

Carried out the following activities:

- Worked as a senior developer for offshore. Coordinating onsite and offshore teams as it is a new proposed project
- Architecture design for testing the infotainment module, Along with NI hardware and their respective cards.
- Automation framework for HMI screen verification, OCR verification, Audio verification, External device connection and disconnection.
- Framework in LabVIEW/Python, Database as MS Access, Test integrator as Test Stand
- Divide task between the team members and tracking it. Effort tracking. Resource management.
- Integration of framework on NI Test stand and get it tested.
- Code review and walkthrough to maintain the required quality.

Hardware Hardware NI PXIE 90 12 chassis, NI PXIE 1095 chassis, NI PXI Controller- PXIe-SS61, PXIe 8234, PXIe-4464 - PXI Sound and Vibration Module Manual, PXI 16 USB Pickering tool.

Operating System Windows 10

Languages LabVIEW, Python

Special Software NI – Test Stand

Project Location Pune, Mumbai, India

Title	JLR
Period	APR 2017 – Sep 2020
Client Name	Jaguar & Land rover
Position	System Analyst

Responsibilities

- Feature Understanding
- Automation Design
- Automation Script Development
- Regression Test
- Feature Stability Test
- Issue Reproduction Test
- SIL, HIL Testing

Project To build automation script for the features which are manually tested and deploy the scripts in server, analyse newly implemented features and develop script for the same. Feature stability test, Regression test, issue reproduction test

Carried out the following activities

- Worked as IT analyst and Associate consulted for Jaguar Land Rover Handled 5000+ Testcase suites for different carlines and different carlines across Jaguar Land Rover account.
- Involved in Automation architecture in national instruments LabVIEW/Test stand. Buy understanding the Functional specification, Requirement, Manual Test suites.
- Automation of Human machine interface screen verification, Optical character recognition and verification, Audio frequency and amplitude verification, External device connection and disconnection, CAN and LIN network simulation, Cluster verification, Camera verification, Log collection.
- Understanding of new feature requirement, functionality and adding them to automation developing feature stability test by launching the feature-testing a single functionality - Closing the feature with over-night testing. Like same test suite will be kept under automation for n number of cycles along with log collection.
- Reporting the issues with a clear description at which cycle the fault has occurred by providing a clear video and its respective logs.
- Worked as script developer by using the LabView library files and integrating them to NI Test Stand Followed by doing the regression testing overnight.
- Issues analyses and reproduction of issue in automation by running the same test suite multiple cycles till the issue gets reproduced.
- Handled different airlines and release with automation. Testing different radio variants based on test specifications and configurations
- Involved in System, regression, Sanity, Random testing, and Issue verifications.
- Test execution (Automation/Manual) for all the features of Infotainment system related to CAN and Diagnostics Domains. Reporting bugs in bug tool and following up them till the bugs get closed

- Updating the test deliverables to clients on time without any slippage.
- Experienced in Test case reviews and reworks based on the new CR's.
- Experienced in Complete cycle executions and updating Test reports, performing reviews for the same and reaching deadlines.
- Defect Analysis, Slippage analysis and rejection Analysis from Customer.
- Requirement Analysis of the specifications of all programs to ensure rework-less deliverable.
- Providing knowledge transfer to new joiners etc...

Hardware NI Hardware & HIL Hardware

Operating System Windows 7

Languages LabVIEW

Special Software Canalyzer, DET tool

Project Location Bangalore, India

Dec 2011 – Apr 2017

Wipro

Title Ford Sync Gen 3 and Ford AHU

Client Name Panasonic Automotive Systems EU

Position Test Engineer

Responsibilities

- Feature Knowledge
- Automation
- Feature Analyses
- Issue Analysis
- Defect logging and tracking
- Issue reproduction

Carried out the following activities:

- Working as senior Test engineer by handle multiple programs Ford Sync Gen 3 and Ford AHU) for Diagnostics module (UDS and Transport protocol).
- Good Experience in developing Test cases for the Diagnostics module using client property automation tools.
- Testing Different radio variants based on test specifications and configurations.
- Involved in System, regression, Sanity, Random testing and Issue verification.

- Test execution (Automation/Manual) for all the features of Infotainment system related to CAN and Diagnostics Domains. Reporting bugs in bug tool and following up them till the bugs get closed
- Updating the test deliverables to clients on time without any slippage.
- Experienced in Test case reviews and reworks based on the new CR's. Experienced in Complete cycle execution and updating Test reports, performing reviews for the same and reaching deadlines.
- Defect Analysis, Slippage analysis and rejection Analysis from Customer.
- Requirement Analysis of the specifications of all programs to ensure rework-less deliverable.
- Providing knowledge transfer to new joiners et...

Dec 2011 – Apr 2017

Wipro

Title Mercedes Benz as Consultant (NTG* 1)

Client Name Panasonic Automotive Systems EU

Position Validation Engineer

Responsibilities

- Feature Knowledge
- Automation
- Feature Analysis
- Issue Analysis
- Defect logging and tracking
- Issue Reproduction

The work involved:

- Working as a senior Test engineer by handle multiple programs (Ford Syne Gen 3 and Ford AHU) for Diagnostics module (UDS and Transport protocol).
- Worked under connectivity module for NTG 5*1 Dual Phone, Apple CarPlay, Auto Android, and Baidu apps.
- Test case development, test plan and test execution.
- Involved in designing test cases for latest CR. Test Plan, Test execution E BUG Baidu and created more valid issued which are related only on Connection issues tracking cycles. Completely involved in random testing for Apple CarPlay, GAL & within a less span of time.
- By understanding the serialization & Apple CarPlay Initial CR. - Detailing Touchpad new CCR did Test Case design for Remote Workstation (phone).
- Handled four members team in offshore individually and updating the weekly efforts to onsite coordinators
- Handling client calls and having meetings with onsite coordinators.

Title AUDI, SEAT, SKODA & VW (PASE-MIB)

Client Name Panasonic Automotive Systems Europe

Position Validation Engineer

Responsibilities

- Integration
- Release Tracking
- Feature Knowledge
- Manual Testing
- Feature Analyses
- Issue Analysis
- Defect logging and tracking
- Issue reproduction
- HIL Validation

The work involved:

- Worked in Pre-Integration team for preparation of Config Spec and tested the newly added spec test cases in the Config spec documents. Performed software download test Tracking the issues and informing to the respective persons,
- Highly involved in creating the automatic software download build & Factory builds (For the end customer) by using binary files with the help of respective scripts, procedures and testing them.
- Preparation of Software specification & version management sheets etc. Debugging the issues related to hardware & software.
- Having knowledge to work with Tera term, D link, QBP Programmer, Debug PCB etc.
- Factory image creation work is to provide a productive output to the client. Played very important role in Pre-Integration team, by understanding the project situations based on test specifications and configurations.
- Took an initiative for giving the KT to 6 members in the team and successfully done with job. As an appreciation got Feather in My Cap award in the team.
- Worked in same project for complete System testing,
- Performed Issue verification for the same above modules and updated the results in JIRA tool Performed Random testing in Connectivity, Media handling. Multilanguage modules.

Training Conducted

Year	Title	Presented to	Location	Organised by
2016	Vehicle Diagnostics Configurations & Calibrations	Wipro	Bangalore	Wipro
2016	Introduction to ECU SW/HW Architecture	Wipro	Bangalore	Wipro
2021	Automotive Validation Design and Architecture	TCS	Pune	TCS
2022	Model Based design Basics	TCS	Pune	TCS
2022	Functional Specification Development Basics	TCS	Pune	TCS

Training Attended

Year	Title	Location	Organised by
2021	State flow Onramp	Online	MathWorks
2021	Simulink Onramp	Online	MathWorks
2021	MATLAB Onramp	Online	MathWorks
2021	Model Based Development MBD for automotive using Simulink	Online	Udemy
2021	Functional Safety According to ISO 26262	Online	Udemy
2021	Service Design: Designing for Experience over time	Online	Udemy
2023	Scrum Master	Live	TCS
2025	Generative AI mastermind	Live	OutSkill

Awards:**Jul-2025****Tata Consultancy Services Limited (FORD Client)**

Award Title	Certificate of Appreciation
Presented by	Herta Llusho (FORD L6 Manager) & Purushottam Shirodkar Delivery Head (TCS)
Appreciation Notes	“Heartly Congratulation for receiving critical Customer Appreciation from Llusho for going extra mile to deliver. I would like to appreciate your dedication, persistence and commitments shown towards making this possible for Ford considering ever changing factors. This outcome would not have been achieved without your immense contribution exhibited here. You are real asset to our organisation and wish you to have long lasting career with continuation of such excellent performance”

Jul-2023**Tata Consultancy Services Limited**

Award Title	Applause Award
Presented by	Milind Lakkad (Executive VP & Global Head Human Resources)
Appreciation Notes	“In appreciation of your outstanding contribution to the organisation, you are awarded the Applause Award You are an inspiring role model to your colleagues. Thank you for your dedication and commitment.”

Nov-2024**Tata Consultancy Services Limited**

Award Title	Certificate of Appreciation
Presented by	PURUSHOTTAM SHIRODKAR DELIVERY HEAD NAG MICHIGAN
Appreciation Notes	“Your excellence and brilliance have always made for Ford Account as stunning performance at work Thanks for bringing so much permanence as an Individual and as a team Your energy and enthusiasm are the toughest benchmark to beat at work Thanks for being the life of the workplace We appreciate your skills and attitude to work It seems like there is no problem that you can’t solve Thank you for everything Thank you team for the continued support and great work Keep it up”

Mar-2018**Tata Consultancy Services Limited**

Award Title	Best Team Award
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Presented by	Ajoyendra Mukherjee(Executive VP & Global Head Human Resources)
Appreciation Notes	“To Prasanth Davuluri In appreciation of your outstanding contribution to the organisation, you are awarded the Best Team Award You are an inspiring role model to your colleagues. Thank you for your dedication and commitment.”

Dec-2021	Tata Consultancy Services Limited
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Award Title	Best Team Award
Presented by	Milind Lakkad (Executive VP & Global Head Human Resources)
Appreciation Notes	“To Prasanth Davuluri In appreciation of your outstanding contribution to the organisation, you are awarded the Best Team Award You are an inspiring role model to your colleagues. Thank you for your dedication and commitment.”

Jan-2025	Tata Consultancy Services Limited
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Award Title	Special Initiative Award
Presented by	Milind Lakkad (Executive VP & Global Head Human Resources)
Appreciation Notes	“In appreciation of your outstanding contribution to the organisation, you are awarded the Special Initiative Award You are an inspiring role model to your colleagues. Thank you for your dedication and commitment.”

Personal Details

Date of Birth	March 18, 1991
Sex	Male
Nationality	India
Date of Joining	April 26, 2017
Designation	Associate Consultant
Location	Westland Michigan
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