

# VRUSHABH PADASALAGI

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## PROFILE SUMMARY

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Results-driven Automotive Electronics Engineer with 3 years of experience in ECU & Component Development & Validation specialized in the design, development & validation of in-vehicle infotainment systems for Renault. Strong expertise in electrical architecture, system integration, software-hardware coordination, and end-to-end validation and testing. Proficient in embedded systems, hardware design, and software testing, with strong knowledge of automotive standards & a focus on quality, safety and performance. Committed to leveraging expertise and passion to drive innovation and contribute to company growth.

## EDUCATION

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### M S RAMAIAH UNIVERSITY OF APPLIED SCIENCES BANGALORE

Bachelor of Technology in Electrical & Electronics Engineering

Cumulative **CGPA: 9.12/10**; M S Ramaiah **Gold Medal** for academic excellence in 2022

Bangalore, B. Tech

Jul 2018 - Jul 2022

## PROFESIONAL WORK EXPERIENCE

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- Experienced Automotive Electronics Engineer with 3 years of hands-on expertise in the **design, development and validation** of ECUs and electronic components. Skilled in **System Engineering, System Integration, Requirements Analysis, and Test Planning & Execution** with a Strong background in **vehicle diagnostics & troubleshooting**
- Responsible for preparing **Requests for Quotation (RFQs)** based on product and component requirements, driving product planning, **defining system requirements**, and managing technical specification signoffs. Oversaw vehicle diagnostics, mechanical packaging, **DV/PV validation, FMEA, ANQP, and end-to-end product lifecycle management**
- Led development and series support of **EE (Electrical/Electronic) components** for Renault vehicles ensuring compliance with **legal regulations, production requirements** & align with project & carline, while meeting targets for **quality, weight and cost**
- Created and updated **requirement specifications for components**, including integration of safety requirements; contribute to concept and vehicle specifications. Manage and maintain schedules with **component and software release versions** for build
- Coordinated with **E/E system** partners regarding system components acting as the **primary contact for component-related** topics within the carline project and delegating responsibilities to system partners or project stakeholders as needed
- Responsible for **designing, verifying and validating functional feature** requirements and specifications for infotainment systems including comprehensive **software verification and validation** activities
- Prepared and managed infotainment **ECU configuration, calibration file and builder file(.xml)** for several Renault projects
- Responsible for **STR (System Technical requirements), SDD (System Design Document), SFA (System functional architecture)** creation & verification for components & ECU system
- Ensured the development progress is properly documented in RD systems (e.g., EPDM) support module strategy and module group activities. Participate in **E/E concept tests** by contributing to **design reviews and B-sample evaluations**.
- Good technical knowledge in automotive communication protocols like **LIN, CAN, Ethernet, UDS, DOIP** & Automotive standards like **functional safety (ISO 26262), Cyber security (ISO 21434) & UDS (ISO 14229)**
- Proficient in inter-system verification and validation using OEM tools (**Vector CANalyzer, Vehicle Spy, DDT2000**) with hands-on experience in **ECU configuration, calibration and software flashing**
- Skilled in **ECU failure analysis** including acquisition of logs from defect vehicles (CAN, USB, PCAP, Ethernet), **debugging network issues, defect logging**, and performing in-depth root cause analysis
- Led the creation, review, and execution of **test plans and test cases**, ensuring functional validation and quality assurance along with performing **in-depth specification reviews, bug analysis and issue resolution**
- Led **supplier management** at E- and Q-levels, overseeing system and imposed part suppliers throughout the development and production process. **Coordinated development activities** ensured alignment with project milestones and managed the handover of requirement specifications (via DOORS exchange) for each release.
- Controlled supplier development activities coordinated **component change requests** monitored supplier-led component **FMEAs** and oversaw test execution to **ensure quality & compliance**, supplier management for **hardware & software development**
- Coordinated defect management for the **ECU** and provided component-specific reports and updates to **cross carline committees** and key stakeholders and managing hardware & **Software release notes**
- Coordinated **ECU diagnostics** activities across **plant, aftersales, and prototype build** shops to ensure effective issue resolution and system reliability & Generated and managed ECU coding and coordinated system-level coding activities
- **Testing & Validation:** Conduct thorough **software testing and validation** to ensure optimal performance, reliability and compliance with **functional and safety requirements**, analyze test results, identify issues and implement corrective actions
- **Regulatory Compliance:** Ensure adherence to industry standards, regulations, certification process & component homologation.
- **Electrical Interface & System Design:** Create and update Electrical Interface Sheets and Application Block Diagrams, ensuring accurate documentation and seamless integration of hardware and software components
- **Supplier Coordination:** Supplier management for **hardware & software development** (Design and Process Validation) & Proven ability to handle supplier interactions, including requirement discussions, issue resolution, and progress tracking

## WORK EXPERIENCE

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### RENAULT NISSAN TECHNOLOGY & BUSINESS CENTRE INDIA

Electronic Control Unit (ECU) & Component Product Development & Validation engineer

Chennai, TN

Aug 2022 - Till Date

3 years of experience in automotive Electronics ECU & Components **Product Design, Development & Validation Engineer**

### TECHNICAL SKILLS

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ECU Design & Development, Configuration Management, ECU Configuration & Calibration, ECU Diagnostics & Reprograming, Communication Protocols (CAN,LIN,ETHERNET), Embedded Systems, System Architecture, EMI/EMC Testing, Automotive ISO Standards, DST/RTT, Debugging Skills, RFQ Preparation, SFA Design, EE Validation, System Integration & vehicle Testing 8D Report, DFMEA, Agile/V-Model, CAN Log Analysis, Audio Tuning, UDS, E2E testing, DTC Analysis, HIL, HARA, ISR, Hardware development, Hardware & Software Troubleshooting, Vehicle Electrical & Electronics, Electrical Architecture, Vehicle Project Management, ECU Validation ,Software verification & Validation, Requirements analysis, OBD, Automotive electronics, ECU testing  
**Tools: Vector CANALYZER, Vector CANOE, DDT200(Diagnostic), GCC, JIRA/Confluence, DOORS, ADB, CAPL, MATLAB/Simulink, PCB Design, ASPICE, AUTOSAR, EV Testing Tools, JFROG (Software Testing), AutoCAD, Python**

### PROJECTS

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**Project Name:** Audio, Radio, Media, Navigation, AA/CP, BT, ADAS & Connectivity feature Development & Validation

#### Roles & Responsibilities

Sep 2022 – Aug 2023

- Worked as **Feature Owner** for in-vehicle **infotainment, ADAS and connectivity features**, overseeing the complete feature development and validation cycle
- Conducted **requirement gathering, requirement analysis** and **specification writing** to support feature development & alignment with System Technical Requirements components & System Technical requirements system objectives
- Engaged in **supplier coordination**, providing clear explanations of requirements and specifications to ensure accurate software implementation for the designed feature
- Created, reviewed & executed **test plans and test cases PVAL** to validate feature performance & system integration
- Performed **feature and software testing** using tools such as **Vector CANalyzer** and **ADB** (Android Debug bridge)
- Managed **JIRA tasks**, including creation and tracking of **Epics, Bugs** and tasks to support project in Agile way
- **Debugging, bug reproduction** and **unit testing** on the **PDE bench** ensuring quick issue resolution and system stability
- Collaborated with suppliers on **specifications, change requests & functional integration** throughout the development
- Prepared **test reports** and managed **feature deliveries** for each software build, ensuring timely updates and documentation

**Project Name:** Next-Gen Smart IVI Platform integration for Dacia Spring EV Project (BBG)

#### Roles & Responsibilities

Sep 2023 – Mar 2025

- **Supplier Identification & Engagement:** Initiated RFS/RFI processes and shortlisted potential suppliers for Smart IVI system development. Conducted supplier workshops and clarified technical queries to align expectations
- **Technical Evaluation & Supplier Nomination:** Assessed technical proposals and conducted QCT-based evaluations to nominate the most suitable supplier for Android Audio development
- **RFQ Process Management:** Led the RFQ launch, coordinated requirement sharing, technical proposal evaluation and facilitated end-to-end supplier communication, negotiations & alignment with vehicle project management to adhere QCT
- **Cross-Functional Governance:** Created and maintained a **RASIC matrix** to define stakeholder responsibilities and ensure structured coordination across engineering, purchasing, styling and validation teams
- **Infotainment Architecture Leadership:** Oversaw the design and definition of infotainment system electronics architecture, ensuring platform-level compatibility with Renault's **T4VS and SWEET** Electrical & Electronics architectures
- **Integration & Packaging:** Conducted CAD and physical packaging studies for a proposed **10.1" IVI display with integrated silver box**, ensuring seamless integration into the **Dacia Instrument Panel (IP)**
- **Requirements Mapping & Compliance:** Analyzed supplier RFQ responses against Renault's technical and regulatory requirements, ensuring full compliance and traceability
- **User Experience Enablement:** Worked closely with HMI, UX/UI, and systems engineering teams to ensure a unified and intuitive infotainment experience aligned with brand standards
- **Project Monitoring & Risk Mitigation:** Tracked technical milestones, identified risks and drove resolution strategies to meet cost, timing, and quality targets throughout development

### Achievements

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#### Renault Nissan Reni Star Annual Business Award (2024-25)

Recognized for successful key feature development and implementation (BTA) in the Renault Kiger infotainment system

#### VP Individual excellence Award (2025)

Awarded for achieving a cost reduction of 5 million INR by optimizing part-level EMI/EMC testing at GARC & ICAT