

KARTHIKKIRAN PALANISAMY

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SUMMARY

Embedded Software Engineer with over 4+ years of diverse work experience in leading automotive tier-1 suppliers with solid understanding of automotive software development life cycle, model-based software design using MATLAB, Simulink and Embedded C programming.

TECHNICAL SKILLS

Standards: AUTOSAR, ASPICE, ISO26262, MISRA, MAAB guidelines

Programming languages: MATLAB, Simulink, Embedded C

Code generation tools: TargetLink, Embedded Coder

Requirements management: DOORS, Polarion

Change management: ClearQuest, JIRA, Windchill RV&S

Version control: ClearCase, Bitbucket

Unit testing tools: BTC, TPT, Tessy

Static code analyzer: Astree, Polyspace

Vector tools: CANape, CANalyzer, CANoe

UML: Enterprise Architect

Communication protocols: CAN, FlexRay, UART, SPI

PROFESSIONAL EXPERIENCE

ZF Technical Centre, Hyderabad, India

Sep 2022 – Present

Senior Engineer

- Responsible for building application software for fully automatic transmission system with electronic shift control unit using model-based design - MATLAB, Simulink and TargetLink following MAAB guidelines.
- Involved in the end-to-end development of automotive models throughout the V-shaped cycle, ensuring alignment with system and software specifications.
- Development of automatic transmission functions including Creep, Idle Speed Driving and Transmission Wheel Slip Control by understanding customer and software requirements.
- Actively participated in model simulation and validation processes, identifying and rectifying issues to ensure model accuracy and functionality.
- Analyzed software requirements and developed appropriate test specifications.
- Performed software unit and qualification tests using Time Partition Testing (TPT) and automated test case generation using TASMO.
- Collaborated closely with cross-functional teams to develop and optimize models.
- Documented all supported tools and applications to streamline existing procedures, effectively training new team members and reducing on-boarding time.
- Coordinated and supervised tasks within the project team and performed peer reviews.

Bosch Global Software Technologies, Coimbatore, India

July 2019 – Sep 2022

Software Engineer

- Responsible for developing automotive Electric Power Steering system (EPS) software modules to Mercedes Benz and BMW passenger vehicles.
- Experienced in deriving ASIL requirement specifications, functional design specifications, implementation of design using MATLAB/TargetLink tools following MAB guidelines and MIL/SIL testing in the incremental V- model architecture.

- Development of steering functions such as Lane Keep Assist, Lane Departure Warning, Automatic Parking Control and Battery Current Coordinator.
- Performed static code analysis following MISRA standards using Astree and Polyspace tools.
- Experienced in AUTOSAR software components, architecture and tools.
- Handling of software design, requirements and maintaining bilateral traceability.
- ISTQB certified Tester with hands-on experience with BTC, Tessy and Vector tools such as Canoe and Canape.
- Tested requirements and models in steering mock-up and tuning the calibration values using Canape, INCA XCP based calibration.
- Created and tested Failure Injection Software to improve the system robustness.
- Knowledge of debugging techniques and ability to use developments tools such as Trace 32 Lauterbach.
- Analyzed, fixed and tracked Hardware-in-loop (HIL) testing bugs reported through JIRA.
- Understanding of ASPICE and ISO26262 frameworks and worked under Agile and Scrum methodologies.
- Knowledge on communication protocols such as CAN and FlexRay.
- Knowledge on HAD levels and possibilities of implementation.
- Coordinated a team of four peers on development activities and communication with German counterparts.
- Actively contributed in knowledge sharing sessions to junior developers.

EDUCATION

PSG College of Technology, Coimbatore, India
Bachelor of Engineering — Instrumentation and Control (CGPA – 8.96/10)

June 2015 - May 2019

OTHERS

Languages: English – Full working proficiency; German – Limited working proficiency

Certifications: ISTQB Certified Tester