

Ajin V W

Principal Engineer — Test Automation, Cybersecurity & ASPICE

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"Make the change that you want to see in the world"

PROFILE

Embedded and test engineer with 10+ years in automotive product development, integration and system testing. Principal Engineer and test lead at Visteon, leading cybersecurity testing for multiple ECU programmes across OEMs and SWE.6 software qualification testing through an ASPICE Level 3 audit. Currently building an open-source, modular Python and Robot Framework test automation platform, AI-driven test case and script generation, and leading a multi-language to Python migration. Deep background in ISO/SAE 21434, fuzz testing, AUTOSAR, UDS/DoIP/SOME-IP and CANoe-based automation.

KEY HIGHLIGHTS

- Led cybersecurity testing for multiple ECU projects for different OEMs
- Led SWE.6 testing and prepared the project for, and achieved, an ASPICE Level 3 audit
- Building a modular, open-source test framework (Python, Robot) covering SWE.5, SWE.6 and SYS.5
- Developing AI-based generation of test cases from SYS requirements and of test scripts, in bulk, with minimal human effort
- Two-time Bravo award winner (Tata Elxsi); IEEE-published author

EXPERIENCE

Visteon · Trivandrum, India

May 2023 – Present

Principal Engineer — Test Lead

- Test lead for cybersecurity testing of multiple ECU projects for different OEMs.
- Test lead for software qualification testing (SWE.6); prepared for and achieved ASPICE Level 3 audit for the project.
- Designing and developing a test automation framework in Python and Robot Framework that can connect to and test devices with differing interfaces, supporting SWE.5, SWE.6 and SYS.5 testing. Open-source and modular by design for scalability, effectiveness and low cost.
- Developing AI-based test case generation from SYS requirements and automated test script generation — dynamic, bulk generation with minimal human intervention.
- Leading the team in migrating code from multiple languages to Python and Robot scripts for better utilisation and reuse of data and assets.

Tata Elxsi · United Kingdom, Japan & India

Apr 2020 – Apr 2023

Specialist Engineer — Security | Customer: Renesas UK

- Identified and analysed cybersecurity weaknesses and vulnerabilities across current and future products; maintained an internal database aligned with the PSIRT team and CWE/CVE platforms to support ISO/SAE 21434 compliance.
- Designed and reviewed cybersecurity work products for ISO 21434 conformance; evaluated SAST/DAST tooling and attack-testing tools.
- Built Python-based automation for handling vulnerabilities, weaknesses and attack patterns.

Specialist Engineer — Test Lead | Customer: Alpine Japan (Audio Amplifier ECU)

- Led SWE.6 system testing (including fuzz testing) and SWE.5 integration testing under ASPICE Level 3 for an AUTOSAR-based MCU; owned test plans, specifications and cases for 15+ drivers and modules with a team of 7+.
- Designed ETHENV, a CANoe/CAPL test platform with Ethernet, SOME/IP, UDS, DoIP and AVB control and monitoring (VN5610, Xcore; ARXML and ODX integrated) for system, integration and fuzz testing.
- Tested security features — Secure Boot, Secure Software Download, Security Access, Security Log — plus primary/secondary bootloaders and DID/RID/DTC/session services.
- Trained the team on project protocols and the ASPICE process; managed bugs in Jira and milestone-based test delivery.

Specialist Engineer — Module Lead | Alpine Japan

- Module owner for AUTOSAR SWCs and RTE configuration (Local Configuration, Audio Manager); SWE.1 requirements in DOORS, SWE.2 design in Enterprise Architect, unit testing and static analysis with VectorCAST and QAC; DEM/DCM diagnostics; Rectify traceability.

System Engineer — SYS.1 / SYS.2 / SYS.3 | Alpine Japan

- Led requirements elicitation and specification and owned system design for the audio amplifier ECU (Ethernet, SOME/IP, DoIP, UDS, bootloader security, car configuration); traceability approved in an external ASPICE audit.

Senior Software Engineer — Test Lead | Customer: Continental Japan

- Built and maintained a CANoe/CAPL, Ethernet-based car simulation and test environment for a High Resolution Flash-LiDAR (ADAS) ECU, including message authentication/cybersecurity, heater and EOL modules, DoIP-UDS diagnostics, XCP and flashing.
- Developed special test cases and automation for the OEM; supported EOL testing and issue analysis.

Senior Software Engineer | Customer: Panasonic Automotive Japan

- HMI software maintenance: root-cause analysis using DLT logs and CANoe full-vehicle simulation, with bug-analysis reports.

Tata Elxsi · Technopark, Trivandrum, India

Dec 2016 – Dec 2018

Senior Engineer | Customer: Harman USA

- Developed 4–12 channel audio software (AUTOSAR/non-AUTOSAR) and UDS diagnostics; architected a reusable CANoe/CAPL automated UDS and network-management test platform with panel UI, reusable test cases and automated report generation.

Senior Engineer — BSW

- Module lead for a DoIP/UDP stack on AUTOSAR 4.2.1; built a Python test framework GUI for packet Tx/Rx; supported MCAL modules.

Earlier roles · Kerala, India

2013 – 2016

Jr. Product Architect — Tranz Software Solutions (Jun–Dec 2016)

- Python/OpenCV motion detection and tracking; drone-based car tracking; architecture for mobile apps.

Software Development Intern — Tata Elxsi (Sep 2015 – Jun 2016)

- Developed an AUTOSAR DoIP protocol module (ISO 13400) in C and Python.

SKILLS

Test automation: Python, Robot Framework, CANoe, CANalyzer, CAPL, VM Script, AI-assisted test generation

Process & standards: ASPICE L3 (SYS/SWE), ISO/SAE 21434, TARA, fuzz testing, MISRA

Protocols: CAN, CAN-FD, Ethernet, TCP/IP, SOME/IP, DoIP, UDS, AVB, A2B, SPI, I2C, XCP, DLT

Embedded & AUTOSAR: C, Embedded C, C++, AUTOSAR 4.2.1, DaVinci, EB Tresos, Vector VSB, DEM/DCM, RTOS

Tools: DOORS, Reqtify, Enterprise Architect, Jira, Git, VectorCAST, QAC, MS Threat Modeling Tool, Eclipse, CMake, GDB, IAR

Also: Java, .NET, JavaScript, SQL, MongoDB, OpenCV, Linux, Windows

EDUCATION

M.Tech, Computer Science & Engineering — Sree Chitra Thirunal College of Engineering, Kerala University

2014 – 2016

B.E., Computer Science & Engineering — Narayanaguru College of Engineering, Anna University

2009 – 2013

PUBLICATIONS & RECOGNITION

- “Study of security and effectiveness of DoIP in vehicle networks”, ICCPCT, IEEE, 2016.
- “Big Data and Clustering Algorithms”, RAINS, IEEE, 2016.
- Two Bravo awards, Tata Elxsi, for project excellence and contribution.
- 3rd position, zonal round, RoboTryst 2012 (national championship, e-Cell IIT Kharagpur).

INTERESTS

Hiking, movies, photography.