Mahesh Krishnan Y

Senior Automation Engineer | Python | Test Automation | Embedded & Telematics | CI/CD

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PROFESSIONAL SUMMARY

Automation Engineer with **2+ years of experience** in software test automation, regression testing, functional validation, and scalable automation framework development. Strong expertise in **Python (OOP), BDD-based automation, CI/CD integration, Docker-based test execution, and regression automation** across telematics and reusable library components. Experienced in **MQTT communication validation, test strategy, requirement-to-test traceability, defect triaging, root cause analysis, and Agile Scrum methodologies**.

TECHNICAL SKILLS

Programming: Python (OOP), Embedded C

Test Automation: Test Automation, Regression Testing, Functional Testing, BDD Frameworks, PyTest Fundamentals, Playwright

CI/CD & DevOps: Azure DevOps, GitHub Actions, Git, Docker, CI/CD Integration

Protocols & Systems: MQTT, Networking Fundamentals, Telematics, ECM Systems

Testing Tools: CANoe, CAPL, SQL

Test Engineering: Test Strategy, Validation Planning, Requirement-to-Test Traceability, Defect Triage, Root Cause Analysis

Methodologies: Agile, Scrum

PROFESSIONAL EXPERIENCE

HCL Technologies — Senior Software Engineer (Automation)

Client: Caterpillar Inc. | November 2023 – Present

Telematics Module Application Component (TMAC)

Role: Regression & Automation Engineer

• Performed **regression testing and functional validation** across multiple ECM systems to support software quality and release stability.

• Developed **Python-based test automation** that improved regression coverage by **40%** and reduced manual testing effort by **60%**.

• Validated **MQTT-based communication workflows and protocol handling** across telematics applications.

• Performed **DEV and PROD environment validation** to support reliable software releases.

• Collaborated with cross-functional teams on **defect triaging, debugging, and root cause analysis**.

• Supported end-to-end validation activities across application components and system environments.

Library Component Validation

Role: Senior Automation & Manual Engineer

• Designed and maintained a **BDD-based test automation framework** for component-level software testing.

• Implemented a **modular test architecture** separating test logic, utilities, and configuration components for maintainability and reusability.

• Integrated automated test suites with **Azure DevOps and GitHub Actions CI/CD pipelines**.

• Containerized test execution using **Docker** to provide reproducible and consistent test environments.

• Authored **test strategies and validation plans** and obtained stakeholder approvals.

• Maintained **requirement-to-test traceability** within Azure DevOps.

• Supported both **automation and manual validation** activities for library components.

EDUCATION

B.E. — Electronics & Communication Engineering

PSG Institute of Technology and Applied Research, Coimbatore | **2023** | **CGPA: 7.52**

ACHIEVEMENTS & CERTIFICATIONS

• **AIR 4 among 1,500 participants** in the CTF Competition conducted by Schneider Electric.

• Secured **3rd Prize twice** in the Inter-Department EXPO for IoT-based projects: Motion Detection (2019) and Data Transformer using Light (Li-Fi) and Sound (2021).

• Certified **Advanced Network Defense Essentials (NDE)** — EC-Council.

• Certifications in **Ethical Hacking, Network Defense Essentials & Cyber Security**.

• **State-Level Basketball Player**, representing Coimbatore District.