

Sumukha M

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Professional Experience

Terralogic Software Solutions Pvt Ltd | Bengaluru, (02/2025- Present)
Software Engineer I

- Developed Python automation scripts using Selenium and SQL for efficient test execution.
- Implemented Robot Framework for advanced test automation, enhancing workflow efficiency.

Continental Automotive Components (India) Pvt Ltd | Bengaluru, (04/2023 – 12/2024)
Software Test Engineer & System Test Engineer

- Contributed to the development and validation of **embedded C, C++ software modules**, ensuring robust code quality and functionality.
- Developed and validated **Rhapsody** design models for SW modules, ensuring compliance with requirements and reducing design flaws by **25%**.
- Executed comprehensive testing for automotive modules using **TESSY**, achieving **100% MC/DC coverage**, and reducing defect rate by **30%**.
- **Automated Unit Testing [TDE]** methodologies using **Python**.
- Experienced in utilizing **CANoe**, **PC diag**, and **EB Tresos** for **system testing, diagnostics, and AUTOSAR configurations**, enhancing overall efficiency and reliability in system development.
- Executed **airbag system testing** for **Honda** vehicles, ensuring compliance with functional and safety requirements.
- **Led cross-BU audits and customer audits**, demonstrating compliance with **SWE.4 and SWE.6** processes for airbag products prior to delivery, ensuring process transparency and customer confidence.
- **Developed and tested** real-time embedded applications on **STM32 microcontrollers** using **ATMEL Studio** and **FreeRTOS**, ensuring optimized performance, system stability, and real-time functionality.

Python Automation and Validation Intern

- **Developed and implemented dataset tools utilizing Python**, achieving a **40%** reduction in data processing time for automotive standards compliance.
- **Verified and validated ADAS** camera functionalities, delivering a defect-free system with **99%** accuracy.

Internship Experience

1. **Rapsol Technologies** | Bengaluru, AI and Data Management Intern. (07/2022 – 09/2022)

- Partnered with industry experts to refine machine learning models, achieving an increase in model training efficiency and enabling faster deployment of solutions to meet business needs.
- **Managed data processing by using Python, Pandas, and OpenPyXL** to convert JSON to Excel, ensuring uniformity, applying statistical insights with **NumPy**, and streamlining data handling by **30%**.

2. **UnScript.ai** | Bengaluru, Front End Development Intern. (04/2022 – 05/2022)

- Utilized HTML5, CSS, and JavaScript for front-end development, creating responsive websites.
- Enhanced user experience with Django's templating.

Technical Skills

- **Programming Languages:** Embedded C, Python, CAPL, C++
- **Microcontrollers & RTOS:** STM32, TIVA series, FreeRTOS, RTOS
- **Testing & Validation:** Black Box Testing, AUTOSAR Validation, Unit Testing,
- **Communication Protocols:** CAN, LIN, UDS, UART, I2C, SPI
- **Tools & Frameworks:** TESSY, CANoe, PC diag, IMS Integrity, GitHub, Jenkins, IBM Rational Rhapsody, IBM Rational DOORS, Citrix Workspace, EB Tresos.

Education

Bachelor of Engineering in Electronics and Communication.
(05/2023)
Global Academy of Technology, Bengaluru

(06/2019–

Cumulative GPA: 9.1

Projects/Paper

1. Airbag Safety Software for AUDI, BMW, VW:

- Achieved 100% functional compliance by performing both development and unit testing using TESSY.
- Developed and maintained over 100+ unit test file revisions weekly, streamlining version control and enhancing team collaboration using IMS Integrity Client and Git.
- Verified continuous integration (CI) results using Jenkins, ensuring alignment with project requirements and standards.
- Designed modular, scalable software using IBM Rational Rhapsody for reliable airbag safety systems.
- Conducted performance and fault injection testing, ensuring compliance with ISO-26262 safety standards.

2. Airbag System Testing for Honda:

- Validated airbag functionalities and crash response times, ensuring safety compliance.
- Conducted in-vehicle ECU tests using CANoe and diagnostic tools, verifying communication protocols, and enhancing diagnostic accuracy by 15%.

3. ADAS Camera Validation and Testing:

- Conducted smoke testing and regression testing for ADAS cameras (MFC527 & MFC525), focusing on Traffic Sign Assist (TSA) and lane detection features.
- Verified camera algorithms for TSA and lane recognition, achieving a 99% defect-free rate.

4. Robotic Arm (May 2023):

Collaborated on a color-sorting robotic arm project, developed an advanced algorithm, and executed prototype development and testing.

5. Inventory management Robot (Jun 2022):

Developed an algorithm for inventory management, found vacant spaces using OpenCV, and published a research paper.

Courses

- Systems Engineering: MathWorks - via Coursera. (July 2024)
- AI for Everyone
- Internet of Things and Embedded Systems
- Python for Beginners
- Introduction to Cybersecurity Tools & Cyberattacks. (In-progress)

Workshops

- VOIS (Vodafone Idea Foundation): Hands-on Training: Fundamentals of Linux, Data Analytics.
- Perfect Plan B E-Learning Private Limited: Completed Master Class on Google Colab Machine Learning App.