Manzoor Ambekar

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Summary

Passionate software developer with expertise in **automotive software** and **embedded systems**. Experienced in developing safety-critical software following ISO 26262 and ASPICE standards. Skilled in optimizing workflows, implementing automation solutions, and enhancing system reliability.

Skills

- **Programming Languages:** C, C++, Python, Xtend, Java, Assembly, Embedded C, Yaml, VB.
- **Hardware Platforms:** Renesas RH850/F1H, RH850/F1L, STM32, NXP.
- **Protocols:** CAN, TCP/IP , I2C, SPI, UART, SOME/IP, LIN
- **Tools:** Git, DevOps, SVN, JIRA, Vector DaVinci, ECU-Test, Enterprise Architect, Odin, MATLAB, CubeSuite+, MinGW, DevC++, SonarQube, Jenkins, LDRA, JUnit, Testona, SWC-Editor, ASTRA, Rational DOORS, Flux, Dash, CANOE, CANAPE, CANalyzer.
- **Development Environments (IDE):** Visual Studio, VS Code, Eclipse, Dev-C++, PyCharm, Spyder.
- Understanding of **Agile** development methodologies, **Linux**, **RTOS**, **QNX**, **ASPICE**, **ISO 26262, BMS**, **OCPP**, **MISRA-C**, **Machine learning**, and **AUTOSAR** modules (Development, configuration, integration, and Testing).

Work Experience

FEV.io
Aachen, Germany
Thesis Student (Functional Safety Software Development)   11/2023 - 05/2024

- Developed a unified software architecture verification tool-chain called "SafArc" based on Automotive Safety Software Architecture (ASSA).
- Validated design integrity by leveraging design metamodel, ensuring compliance with **ISO 26262**, **ASPICE**, and **AUTOSAR** standards; enhanced system reliability and reduced validation time.
- Introduced an automation of safety-relevant **metrics** in development lifecycle to generate architectural trend-lines.
- Developed Modelling guideline, consistency, and safety checks based on the **functional safety** software development guidelines.

FEV.io
Aachen, Germany
Intern (Functional Safety Software Development)   03/2023 - 11/2023

- Internship with Master Thesis on the topic, "SafArc: A unified software architecture development tool-chain".
- Completed the SafArc proof of concept for the Quantitative Empirical Analysis.
- Refactored and bug fix in the ASSA reusable safety components performed with the process defined according to **ISO 26262** part 6 and **IEC 61508**.
- Diagnosed development cycle of OTP module with the help of SafArc and tools such as **Vector DaVinci Developer**, **Configurator**, **FMEA**, and **DFA** and **embedded C language**.

PiNTeam
München, Germany
Werksstudent Software-Entwicklung   04/2022 - 02/2023

- Helped in the implementation of the **CI/CD** automation. That can automatically build, test, deploy, and monitor the code using Auto **DevOps**.
- Collaborated in the configuration and implementation of **Battery Management System** with **OCPP**.
- Assisted in the implementation of the Automated test environment with **ECU Test**, and **YAML**.

- Created Python automation scripts that reduced manual design tasks by 60%, saving approximately 40 hours/month.

Robert Bosch Engineering and Business Solutions
Senior Engineer

Bangalore, India
01/2021 - 09/2021

- Participated in the implementation of **Advanced Driver Assistance Systems (ADAS)** features in classic AUTOSAR environment.
- Implemented **Partitioned** and **Multi-core** support for **AUTOSAR RTE** and **OS**.
- Supported the Implementation and Integration of the AUTOSAR Operating System and **IOC** communication.
- Collaborated in the Multi-camera System software development that assists drivers with a 360-degree view for safe and comfortable parking and maneuvering.
- Delegated **Memory Protection Unit (MPU)**, **XMPU**, and **XPPU** Modules in NRCS for multiple customers.

AVIN Systems
Software Engineer

Pune, India
04/2018 - 12/2020

- Contributed in the implementation, embedded, design, and testing of **AUTOSAR RTE (ASIL-D)** and Service Discovery Modules.
- Feature owner of **Service Discovery, Socket Adaptor** and **TCP/IP** Modules.
- Administered the Development, Embedded code, Design, and Testing of **Client-Server** code generator.
- Deployed the **CI/CD** process with **Atlassian**, **Jenkins** and **SonarQube** tools.
- Analyzed safety issues using **RCA**, **FMEA** and **DFA**.
- Supported multiple internal/external teams with the review process and helped them improve quality and fix issues.

Education

Masters in Information & Electrical Engineering,
Hochschule Wismar, Wismar, Mecklenburg-Vorpommern
GPA: 1.7

10/2021 - 01/2025

Bachelors in Electronics & Telecommunication,
Savitribai Phule Pune University, Pune, India

07/2014 - 07/2017

Diploma in Electronics and Telecommunication,
Maharashtra State Board of Technical Education, Pune, India

07/2011 - 07/2014

Honors & Awards

- Certificate Course in **Embedded System Design** - Savitribai Phule Pune University   08/2017 - 02/2018
- Certified **CLA** – C Certified Associate Programmer Certification, by C++ Institute   01/2023.
- Certified **IoT Fundamentals**: Connecting Things, by Cisco   01/2023.
- Star Performer of the Quarter - AVIN Systems   05/2020.
- Advance GitLab Training, LinkedIn Learning.
- Member of Fun-Figo committee in AVIN Systems for managing corporate events.

Language Proficiencies

- English (Native Speaker)
- German (Limited Working Proficiency – B1)
- Hindi (Native Speaker)