

# VIJENDRA SANODIYA

Embedded Software Engineer | Embedded C Developer | AUTOSAR (BSW+MCAL) | CAN | UDS

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Bangalore | [LinkedIn](#) | [LeetCode](#) | [HackerRank](#)

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## PROFESSIONAL SUMMARY

Embedded C Developer with 3 years of experience in AUTOSAR-based ECU development, integration, and validation. Hands-on experience in Embedded C development and AUTOSAR integration, CAN communication, and UDS diagnostics. Worked with low-level communication protocols like SPI, I2C, and UART for peripheral interaction and debugging. Strong understanding of AUTOSAR MCAL and BSW layers, along with ARXML configuration. Expertise in debugging ECU communication issues using CANoe and resolving real-time integration defects. Experience working on RH850 microcontroller in automotive domain projects.

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## SKILLS

**Programming Language:** Embedded C, C++, Python

**AUTOSAR:** MCAL, BSW, DCM, DEM, COM, CanIf, ARXML Configuration

**RTOS:** FreeRTOS (Task Scheduling, Queue, Semaphore, Mutex)

**Communication :** CAN Protocol, UDS Diagnostics , CAN TP

**Embedded Linux::** Familiar with Embedded Linux concepts, device drivers basics, and user-space interaction

**Debugging & Tools :**ECU Debugging, CAN Trace Analysis (CANoe), System-Level Debugging

**Development Tools & Process::** CANoe, CANalyzer, CAPL, Jira (Issue Tracking), Software Development Lifecycle (SDLC)

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## RELEVANT EXPERIENCE

Embedded Software Engineer (Tata Elxsi)

### Mar 2023 – Present | Bengaluru

- Worked on Embedded C code development and defect fixing for AUTOSAR-based ECU
- Interfaced with SPI, I2C, and UART protocols for peripheral communication and debugging
- Analyzed and supported MCAL layer configuration and AUTOSAR integration
- Debugged CAN communication issues using CANoe, reduced defects by 20–30%
- Resolved signal mismatches and timing-related issues during ECU integration
- Validated UDS diagnostic services such as DTC, DID, and Security Access
- Performed system-level debugging on RH850 microcontroller
- Worked on both development and validation of AUTOSAR-based ECU software
- Worked on MCAL layer understanding and integration support for AUTOSAR ECU

## PROJECTS

### Audio Amplifier ECU – CAN & UDS Diagnostics

- Worked on AUTOSAR-based Audio Amplifier ECU for CAN communication and diagnostics
- Debugged CAN signal mismatch issues during ECU integration using CANoe
- Resolved diagnostic communication failures by analyzing ARXML configuration
- Validated UDS services including DTC, DID, and Security Access
- Improved ECU stability by fixing timing-related communication issues
- Modified Embedded C code to fix defects and improve system performance

### CAN Stack Integration & Message Counter

- Implemented message counter logic in Embedded C for CAN communication
  - Integrated CAN stack and validated message transmission across ECU nodes
  - Worked with SPI, I2C, and UART protocols for peripheral communication and debugging data transfer issues Debugged data inconsistency issues and improved communication reliability
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## KEY ACHIEVEMENTS

- Resolved critical ECU integration bugs improving system stability.
  - Recognized for debugging complex CAN communication issues.
  - Solved 200+ problems on LeetCode.
  - Earned Silver Badge in C/C++ on HackerRank.
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## EDUCATION

Bachelor of Technology (B.Tech) in Electronics and Communication Engineering  
Technocrats Institute of Technology & Excellence, Bhopal (RGPV University)

2018 – 2022

Higher Secondary (12th) – MP Board  
Percentage: 80.4%

Secondary School (10th) – MP Board  
Percentage: 86.16%