

AKSHAY SOLUNKE

EMBEDDED ENGINEER

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ABOUT ME

Dedicated Embedded Systems Engineer with a extensive experience in embedded software and hardware development. Proven expertise in various microcontroller environments, particularly **STM32, PIC, ARM, AVR** with a strong background in developing and testing embedded systems for automotive and related applications. Skilled in communication protocols such as **CAN, LIN, SPI, I2C, UART, TCP/IP, Modbus**. Proficient in **C programming, Embedded C, RTOS**, circuit design, debugging, and system optimization. Hands-on experience with electronic power steering, vehicle control units (**VCUs**), and real-time embedded applications. Adept at working closely with hardware engineers to integrate software with automotive electronic control units (**ECUs**) and other embedded systems, ensuring seamless functionality and reliability.

EDUCATION

PUNE UNIVERSITY

Master of Science in Electronic Science
June 2023

SKILL

Embedded C Embedded
Software
Development

STM32 Microcontrollers
STM32CubeIDE
CAN Protocol and DBC Files

Embedded Hardware Prototyping
PCB Design
MATLAB & Simulink

WORK EXPERIENCE

GoVid youth Mobility - Embedded System Engineer

AUG 2024-NOW

- Implementing communication protocols: **CAN, LIN, SPI, I2C, UART, Modbus**.
- Writing firmware in C, and Embedded C.
- Using **RTOS** (e.g., FreeRTOS) for real-time application.
- Debugging using oscilloscopes, logic analyzers, and in-circuit debugger.
- Interfacing with sensors, **EEPROM, IMUs, SD cards for data logging**.
- Working with vehicle control units (VCUs), and other automotive modules.
- Developed an embedded data logging system for CAN communication, reducing debugging time by 30%.
- Optimized firmware performance, improving real-time response by 40%.
- Implemented power-efficient embedded designs, reducing system power consumption by 15%.

Automate India Pvt Ltd - Embedded System Engineer

July 2023-Sept 2024

- Developed embedded firmware in C and Embedded C for real-time measurement and display
- Implemented signal processing algorithms for accurate RPM and voltage readings.
- Designed custom PCB and circuit for the multimeter, ensuring high accuracy and noise immunity
- Integrated LCD display, keypad input, and analog front-end circuits for user-friendly operation.

- Collaborated on the **ASCIL-D** Project (**Electronic Power Steering – EPS**), focusing on motor position measurement testing.
- Performed Hardware-in-the-Loop (**HIL**) testing using the **dSPACE** test bench to validate EPS control algorithms and system behavior
- Developed and executed test cases for EPS systems to ensure compliance with automotive industry standards.
- Utilized **Vector CANoe** tools for execution, and analysis.
- Worked with **CAN and LIN** communication protocols for data transmission and diagnostics in EPS systems.
- Simulated various vehicle conditions on the **dSPACE HIL system** to analyze system performance under different scenarios
- Debugged and analyzed sensor data, motor position signals, and control logic behavior using CAN Analyzer Vector tools.
- Successfully validated and improved motor position measurement accuracy, enhancing EPS system reliability
- Implemented HIL test automation scripts, reducing manual testing time by 30%
- Ensured compliance with ISO 26262 functional safety requirements through rigorous **HIL testing** and **documentation**.

CERTIFICATIONS

Executive Post Graduate Certificate Program in Electric Vehicle Design, iHUB DivyaSampark IIT Roorkee
MATLAB Onramp, MathWorks
Simulink Onramp, MathWorks
Online Training and Certification Course on AI & ML, DIAT