




# SANTOSH PARMAR

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Embedded Software Engineer | Telematics | C/C++ | Problem Solver

 santosh.d.p76@gmail.com  +91-9353296373  Bangalore, India

 [Santosh Parmar | LinkedIn](#)

## SKILLS

Languages: C, C++, Python, Shell Scripting

Embedded & Tools: STM32, RTOS, UART, I2C, SPI, GPIO, PWM, ADC

Linux & Debugging: Linux System Programming, GDB, Valgrind

Networking: MQTT, TCP/UDP Socket Programming, GSM/GNSS, CAN

Development Tools: Git, CMake, Makefile, Cross Compilation, CI/CD

App: JSON, AWS SDK (S3, Lambda), SQLite

## PROJECTS

- ❖ AWS-Connected Telematics Logger 2024-Oct – Present\_
  - Designed and developed a multi-threaded C++ application to log GSM, GPS, accelerometer, gyroscope, and power data from an embedded Linux board.
  - Managed S3 data upload via MQTT and direct AWS SDK integration, including handling for file chunking and retry logic.
  - Implemented a circular buffer file management system with a 30-day retention policy and 32MB file size cap.
  - Tech-Stack: C++, Linux, Shell, AWS (S3, Lambda), MQTT, JSON
- ❖ GSM + GNSS Logger with Fault Simulation UI 2024-June – 2024-Oct
  - Built a Qt5-based diagnostic UI displaying real-time GNSS and GSM data in table views.
  - Included fault simulation logic to induce segmentation faults and test recovery behavior.
  - Tech-Stack: C++, GSM AT Commands, JSON
- ❖ Remote update of the Application and BSP Firmware 2024-Jan -2024-June
  - To update the new feature in field this is developed
  - Impact: To save the time and effort to go and manually do update of device.

❖ Field Test Automation 2023-Feb– 2024-Jan

- Designed automated test setups for evaluating embedded devices on field with varied power conditions and GPS/GSM performance logging.
- Created structured field reports with comparison matrices.
- Tech-Stack: Bash, Python, GNSS, GSM, Shell Automation

❖ Power & Boot Status Monitoring System \_2023\_

- Integrated board power metrics (voltage, uptime, boot reasons) into structured JSON objects with persistent logs for analysis.
- Tech-Stack: C++, JSON-C, Shell Scripting

## EXPERIENCE

❖ Embedded Software Engineer

**ZF GROUP** | Bangalore, India 2023 -Oct -Present

- Developed telematics application in C/C++ which helps to collect low level data of Hardware like GSM, GNSS, Power, RAM, CPU, EMMC, Temperature, Motion Sensor etc.
- Developed PC based application to communicate with Device in a field remotely for diagnostic purpose.
- Developed telematics logging systems and remote diagnostic features.
- Maintained robust communication with cloud services using MQTT and AWS SDK.

❖ Firmware Developer –

**ZF GROUP** Project-Based Work 2022-June– 2023-Oct

- Developed Geo-Fencing for existing legacy product.
- Developed dual-profile logic in one of the legacy product to overcome with new design of Hardware which saved R&D cost.
- Contributed to multiple POCs and field tests across embedded Linux platforms.
- Developed the features for customer as per their requirement

## EDUCATION

B.Tech – Electrical & Electronics Engineering

HKBBK college of Engineering 2017-Jul – 2021-Aug

## CERTIFICATIONS

Embedded System ,C/C++, Linux - Vector India

C/C++ Programming – NPTEL

Linux Shell Scripting – Udemy