

Afroj Divan

Chennai, India | afrojdivan@gmail.com | +91-8344022214

LinkedIn: <https://www.linkedin.com/in/afroj-divan/> | Github: <https://github.com/riverfoxx>

Professional Summary

Embedded DSP & Software Engineer specializing in real-time signal acquisition, **sensor-fusion**, and **RTOS-based firmware**. Proficient in developing optimized C/C++ and Assembly code for high-performance microcontrollers (STM32, Nuvoton). Experienced in utilizing **Matlab, Simulink, and Signal Processing** toolkits to design analytics pipelines for sensor data and telemetry. Committed to bridging the gap between hardware-level signal acquisition and high-level data analysis

Technical skills:

- **DSP & Analytics:** Signal Processing, Sensor-fusion, Matlab, Simulink, PyTorch, ML tools, scikit-learn.
- **Embedded Programming:** C, C++, Embedded C, Assembly (Low-Level), Python.
- **Real-Time Systems:** FreeRTOS, Zephyr, Multithreaded Firmware, Power-management.
- **Microcontrollers:** STM32, AVR, Nuvoton, PIC, Arduino.
- **Communication Protocols:** SPI, I2C, UART, CAN, Modbus, Bluetooth (BLE), LoraWan.
- **Tools & Debugging:** Oscilloscope, Logic Analyzer, STM32CubeIDE, Atmel Studio, Proteus, E-Plan, ST-Link.

Professional experience:

Embedded Software Engineer | *Ethical and Intelligent Systems* | **Oct 2025 – Present**

- Developing firmware for **Nuvoton-based** custom tracking systems, focusing on high-accuracy location signal processing.

- Designing alternative vehicle tracking solutions by integrating and processing **Bluetooth (BLE) and On-Board Diagnostic (OBD)** data streams.
- Implementing real-time data acquisition for personal, vehicle, and asset tracking systems.

Embedded Systems & IoT Intern | *Technologies Global (Bangalore, India)* | **Dec 2024 – Oct 2025**

- Designed **analytics pipelines** to extract and process sensor data, significantly improving diagnostic capabilities for fuel dispensing systems.
- Developed and tested embedded firmware for automated dispensing devices using Embedded C and Python.
- Integrated real-time driver modules for **RFID sensors** and GSM modules (A7670).

Co-Founder | *Shared Parking Startup (Sweden)* | **July 2022 – May 2024**

- Engineered a prototype platform for urban parking reservation in high-demand Scandinavian markets.
- Conducted market validation and piloted tech solutions in urban neighborhoods.

Data Engineer | *Hira Software* | **Feb 2019 – Nov 2020**

- Built **automated reporting and analytics dashboards** using Python and SQL to monitor financial transactions.
- Developed secure mobile/web applications focused on data integrity and user authentication.

Education

- **Master's in Embedded and Intelligent Systems** | *Halmstad University, Sweden* (2020-2022)
 - *Focus:* Big Data, AI opportunities, and Intelligent Hardware.
- **B.Tech in Electrical and Electronics Engineering** | *Amrita School of Engineering, India* (Graduated 2019)
 - *Relevant Coursework:* Control Systems, Signals and Systems, Circuit Theory.

DSP and Engineering projects:

- **Fire Detection with Quadcopter:** Utilized **Computer Vision and OpenCV** for real-time image signal processing and object detection.
- **Data Mining for Voi:** Applied **Supervised & Unsupervised Machine Learning** to analyze large datasets for pattern recognition.
- **Automated Data Pipelines (Freelance):** Developed ETL workflows on **Google Cloud (BigQuery)** and created custom tools using Gemini and Copilot.

Languages:

- English, Tamil, Hindi, Swedish, and Japanese (Learning).