Sanket Mali

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Summary

Embedded Software Engineer skilled in firmware development, Embedded C/C++, Python, and sensor-based systems. Proficient in microcontroller programming (ESP32, 8051, PIC, LPC2148, Raspberry Pi, Jetson Nano) and hardware-software integration. Experienced in real-time systems, edge AI, and robotics with expertise in debugging, optimization, and delivering efficient embedded applications.

Education

B.E. Electronics & Telecommunication, PVG's COET (SPPU, Pune) 2022 – 2026
CGPA: 8.02/10 (as of 2025)
HSC (12th): 80.21%, Chate Junior College, Kolhapur 2020 – 2022
SSC (10th): 88%, New English School, Pattenkodoli 2020

Technical Skills

- **Languages:** Embedded C, C++, Python, MATLAB
- **Microcontrollers:** ESP32, 8051, PIC16F877A, LPC2148, Raspberry Pi, Jetson Nano
- **Protocols:** UART, SPI, I2C, CAN, MQTT, Bluetooth, Wi-Fi
- **Tools:** Keil, MPLAB, Proteus, Git, VS Code, Arduino IDE, OpenCV
- **Frameworks:** Linux, ROS (Robotics Operating System)
- **Core Areas:** Firmware Development, Edge AI, Real-Time Systems, Computer Vision

Experience

Embedded Systems Intern, Envision Academy, Pune Jan – Apr 2025

- Developed real-time control systems on 8051, PIC16F877A, LPC2148, reducing latency by 15%.
- Optimized C firmware for low-power operation, cutting energy use by 20%.
- Debugged hardware-software integration using Proteus, improving reliability by 25%.
- Integrated multiple sensors for automated monitoring, increasing data accuracy by 10%.

Research Intern, IIT Bombay Jan – Apr 2024

- Built deep learning model (Xception), achieving 99.2% accuracy for four tumor types.
- Applied preprocessing and augmentation techniques, reducing overfitting by 18%.
- Deployed model with Gradio for real-time predictions, reducing processing time by 40%.

Projects

Real-Time Face Recognition System (Jetson Nano) 2025

- Implemented standalone edge AI system with local face detection and recognition using face_recognition library.
- Achieved 89% recognition accuracy with automated image management (100-image limit with oldest deletion).
- Optimized for real-time processing through frame skipping and face encoding caching, reducing startup time by 60%.

Smart Vehicle Security System (ESP32-CAM) 2024

- Implemented vehicle security with face/QR authentication, GSM alerts, and GPS tracking.
- Achieved 95% recognition accuracy with alerts sent in under 2 seconds.
- Enabled web server for remote monitoring and control.

Achievements & Certifications

- Finalist, MKSSS Hackathon 2024 (Top 5 of 105+ teams)
- Developed Autonomous Floor-Cleaning Robot with ESP8266
- Member of DAUSS Club at PVG's COET, Pune
- Certifications: Deep Learning (NVIDIA, 2024), Embedded Systems Design (2025)