# 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, PIC16F877A, LPC2148, Raspberry Pi) and hardware-software integration. Experienced in real-time systems and robotics, with strong debugging, optimization, and development skills in 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
- **Protocols:** UART, SPI, I2C, CAN, MQTT, Bluetooth, Wi-Fi
- **Tools:** Keil, MPLAB, Proteus, Git, VS Code, Arduino IDE
- **Frameworks:** Linux, ROS (Robotics Operating System)
- **Core Areas:** Firmware Development, Embedded Software, Real-Time Systems

## Experience

**Embedded Systems Intern**, Envision Academy, Pune Jan – Apr 2025
- Developed real-time control systems on 8051, PIC16F877A, and LPC2148, reducing latency by 15%.
- Optimized C firmware for low-power operation, reducing energy consumption 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 using Xception architecture, achieving 99.2% accuracy for classifying four tumor types.
- Applied advanced preprocessing and augmentation techniques, reducing overfitting by 18%.
- Deployed model with Gradio for real-time predictions, reducing processing time by 40%.

## Projects

**Smart Vehicle Security System (ESP32-CAM)** 2024
- Implemented vehicle security with face/QR code authentication, GSM alerts, and GPS tracking.
- Achieved 95% recognition accuracy; alerts sent in under 2 seconds.
- Enabled web server for remote monitoring.

**Autonomous Floor-Cleaning Robot (ESP8266)** 2023
- Developed autonomous navigation using IR and ultrasonic sensors, achieving 90% coverage efficiency.
- Enabled mobile app control via Wi-Fi and MQTT.
- Reduced power consumption by 20% through efficient firmware optimization.

## Achievements & Certifications

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