

# MOHAMED ISHAUQ

## Embedded Software Engineer

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## OBJECTIVE

To secure an entry-level embedded systems engineer role where I can apply my hands-on project experience with microcontrollers and low-level programming.

## ABOUT ME

I am Mohamed Ishauq S, a final year Electronics and Communication Engineering student with a passion for embedded systems. I am actively learning C programming, bare-metal coding, and working with microcontrollers like ESP32, Arduino, and on STM32. I have experience in building projects such as an autonomous car with remote, voice, and self-driving control. Eager to apply and expand my skills in real-world embedded systems projects

## EDUCATION

### Aalim Muhammed Salegh College of Engineering

B.E. in Electronics and Communication Engineering -2022 - 2026

## SKILLS

- **Embedded Systems:** STM32, ESP32, Arduino, Raspberry pi, Bare-metal programming
- **Programming:** C language, Python
- **Tools:** STM32CubeIDE, Arduino IDE, VS Code, Github, Linux (basic terminal usage, Raspbian OS), STM32-ST Link utility software (V2 programmer)
- **Communication Protocols:** UART, I2C, SPI, Bluetooth
- **Languages:** English, Tamil, Hindi

## PROJECTS

### 1. STM32 Bare-Metal Drivers (Basics)

Developed low-level drivers using STM32CubeIDE with register-level programming. Gained hands-on experience reading datasheets and configuring peripherals like GPIO and UART.

### 2. Multi-Mode RC Car (Arduino)

Built an Arduino car with voice control, Bluetooth app control, and obstacle avoidance using ultrasonic sensors and L293D motor driver.

**3. Self Balancing Robot using ESP32** Designed and developed a two-wheeled self-balancing robot using the ESP32 microcontroller. Integrated MPU6050 IMU sensor for real-time tilt angle detection and implemented PID control algorithm to maintain balance. Tuned parameters through serial feedback. Powered by a Li-ion battery and controlled via Bluetooth for manual override.

### 4. Automatic Attendance System using Raspberry Pi

Designed a smart attendance system using Raspberry Pi and OpenCV for real-time face recognition. The system captures and recognizes student faces through a camera module and logs attendance automatically into a file.