Gesture-Controlled ESP32 Robot

1. Idea

This project involves building a gesture-controlled robot car using ESP32 modules and ESP-NOW communication protocol. The robot interprets gestures from an ESP32-based motion sensor (accelerometer/gyroscope) and moves in corresponding directions (forward, back, left, right). It allows for touchless, wireless robot control with potential applications in smart mobility, education, and accessibility.

2. Technology Used

- ESP32 microcontrollers
- ESP-NOW wireless communication
- Arduino IDE (C++)
- DC motors and L298N motor driver
- Accelerometer sensor (MPU6050)
- Power supply and chassis

3. Impact

This project demonstrates how modern microcontrollers and low-power wireless protocols can be used to build innovative gesture-based control systems. It opens doors for contactless user interaction in robotics, enabling use cases in medical robotics, accessibility devices, and educational kits.