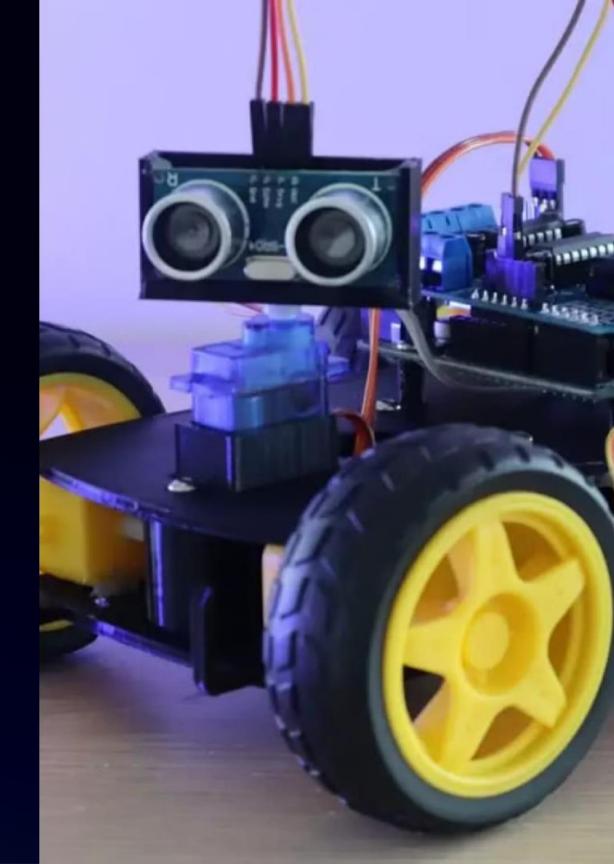
Introduction to the Obstacle Avoiding Car Project

In this project, we'll build an obstacleavoiding car using a Chassis Car Kit, Ultrasonic Sensor, Servo Motor (SG90), L298n motor driver module, and an Arduino UNO. This autonomous vehicle can detect and navigate around obstacles, making it a versatile and practical project for both beginners and experienced hobbyists.



Components and Materials

1 Chassis Car Kit

Provides the base structure and wheels for the car.

2 Ultrasonic Sensor

Detects the presence and distance of obstacles in front of the car. 3 Servo Motor (SG90)

Allows the Ultrasonic Sensor to rotate and scan for obstacles.

4 L298n Motor Driver

Controls the speed and direction of the car's motors.

5 Arduino UNO

The brain of the project, responsible for processing sensor data and controlling the car's movements.

Building the Obstacle Avoiding Car

Assembly Carefully assemble the chassis, motors, and wheels following the instructions provided with the Chassis Car Kit. Wiring and Connections Connect the Ultrasonic Sensor, Servo Motor, and Motor Driver to the Arduino

UNO, creating a cohesive electrical system.

Sensor Integration

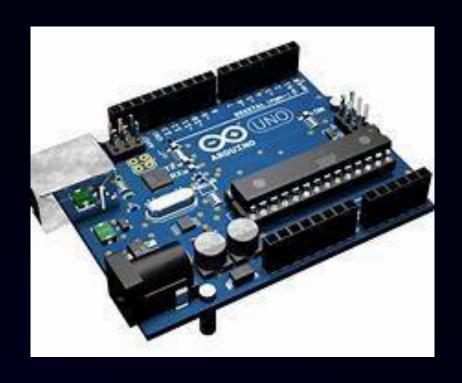
Mount the Ultrasonic Sensor and Servo Motor on the car's front, ensuring they can rotate and scan for obstacles.

Principle of Arduino UNO

Programming

The Arduino UNO can be programmed using the Arduino IDE, which provides a user-friendly interface for writing, compiling, and uploading code to the board.

The brain of the project, responsible for processing sensor data and controlling the car's movements.



Principle of Ultrasonic Sensor

Detects the presence and distance of obstacles in front of the car.



Principle of Servo Motor



Allows the Ultrasonic Sensor to rotate and scan for obstacles.

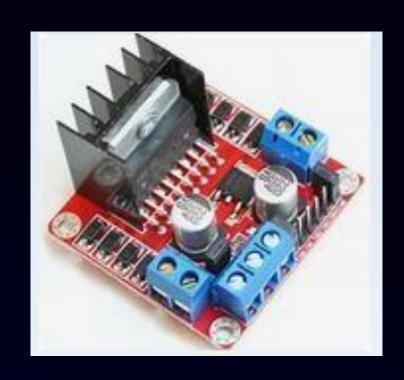
Angular Positioning

Servo motors can be commanded to rotate to a specific angle, typically within a 0-180 degree range, enabling the sensor to cover a wide field of view.



Principle of L298n Motor Driver

Controls the speed and direction of the car's motors.



Programming the Arduino UNO

1

2

3

Sensor Readings

The Arduino UNO reads distance data from the Ultrasonic Sensor and processes it to determine the presence and location of obstacles.

Motor Control

Based on the sensor data, the Arduino UNO sends control signals to the L298n motor driver to adjust the speed and direction of the car's motors.

Video Link: Click Here

Servo Control

The Arduino UNO also controls the Servo Motor to rotate the Ultrasonic Sensor, allowing it to scan for obstacles in a wider field of view.