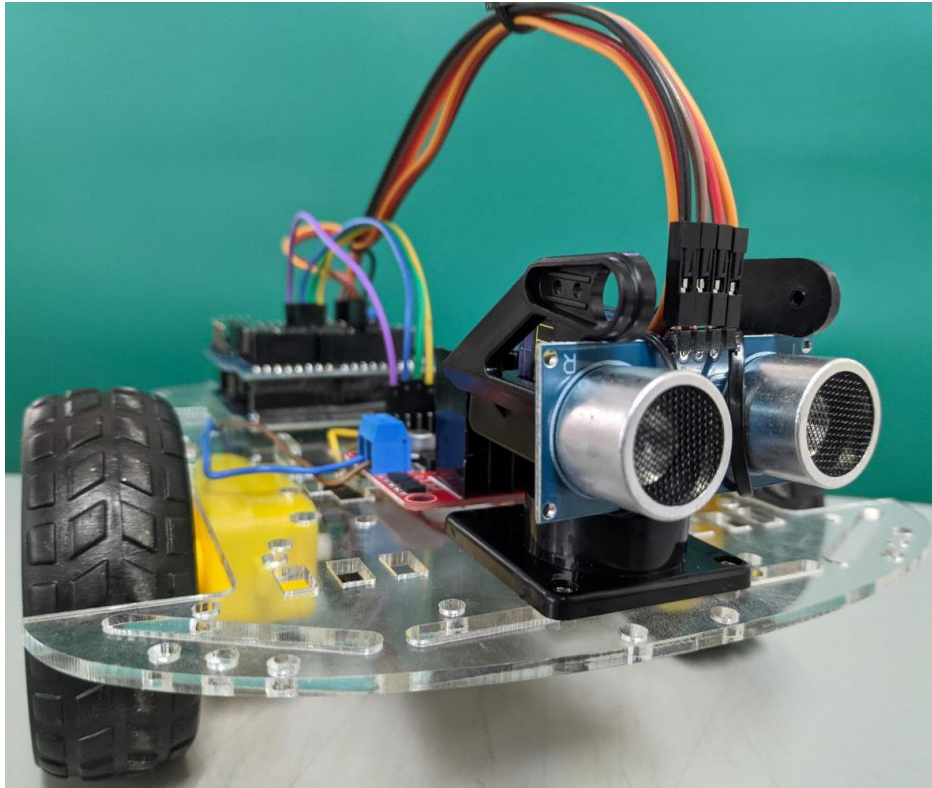


## **ARDUINO UNO R3 2WD SMART ROBOTICS ROBOT CAR CHASSIS KIT SET (V2)**



### **Introduction:**

This Arduino Uno R3 2WD Smart Robotics Robot Car Chassis Kit Set consists of set of chassis body, DC gear motor, Arduino Uno R3, Ultrasonic sensor, motor driver, servo-motor and other components. This robot car is use for detecting obstacles and avoiding the collision.

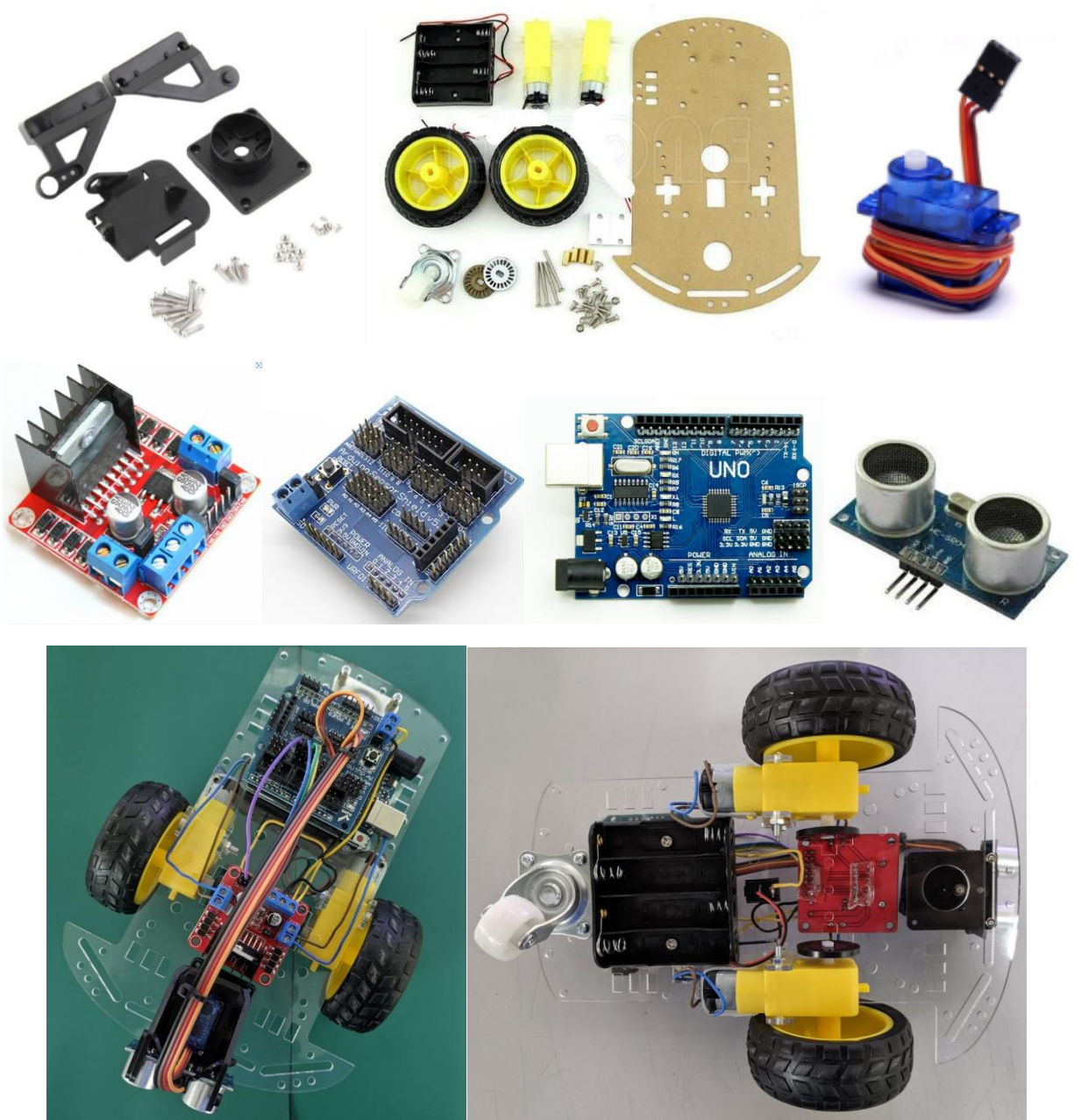
With ability to operate autonomously based on the bot's ultrasonic sensor distance reading. The ultrasonic sensor emits high-frequency sound waves (these waves can't be detected by human ears because they are too high), and waits for those sound waves to reflect off of an object, and calculates how long it takes for the sound to return to the sensor. The microcontroller controls the motors left, right, back, front, based on ultrasonic signals. In order to control the speed of each motor pulse width modulation is used (PWM). This set includes servo-motor which helps the robot car find another way by turning 180° when the ultrasonic sensor detects an obstacle in front of it.

### **Objective:**

The robot will detects an obstacle in front of it and find the best way to move.

**Component Needed:**

- |  |        |
|--|--------|
| 1. 2WD Robot Chassis Kit   | x 1Set |
| 2. Arduino UNO R3 + Cable  | x 1pcs |
| 3. Arduino Sensor Shield   | x 1pcs |
| 4. L298n Motor Driver Module                                     | x 1pcs |
| 5. Ultrasonic Sensor Module HC-SR-04P                            | x 1pcs |
| 6. SG90S Micro Servo Motor                                       | x 1pcs |
| 7. Jumper Wire Female to Female                                  | x 8pcs |
| 8. FPV Servo Bracket Camera Mount // Ultrasonic Mounting Bracket | x 1pcs |



**Procedures:**

1. Attach Arduino Sensor Shield on top of Arduino UNO as picture below.



2. Connect each module to Arduino Sensor Shield as in table below

**Caution:** Any incorrect wire connection will lead to problems including device malfunction, device failure, damage to the device or damage to other property.

<u>Arduino Sensor Shield</u>	<u>L298N Motor Driver Module</u>	<u>Battery Holder AA x 4pcs (6v)</u>
D7, DATA 7	IN1	-
D6, DATA 6	IN2	-
D5, DATA 5	IN3	-
D4, DATA 4	IN4	-
VCC(INPUT)	VCC(INPUT)	Positive (+) Terminal
GND(INPUT)	GND(INPUT)	Negative (-) Terminal

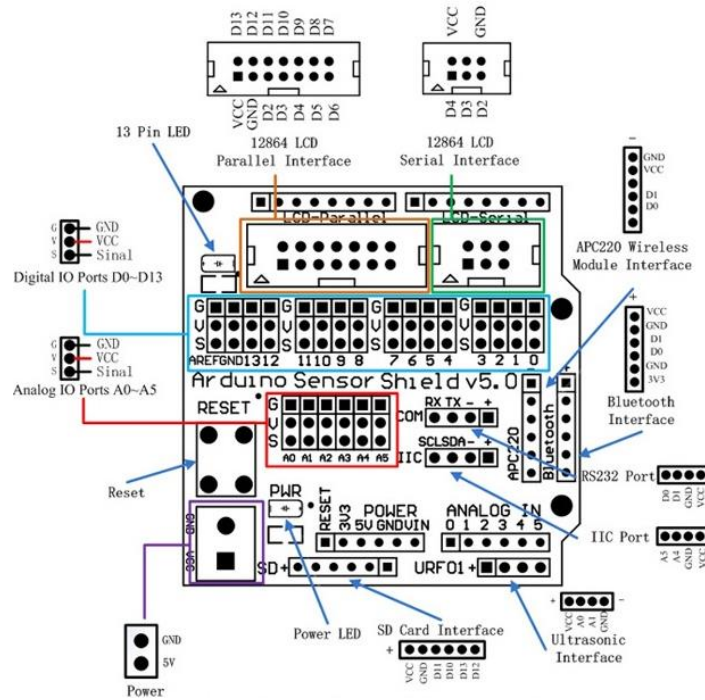
<u>Arduino Sensor Shield</u>	<u>SG90S Micro Servo</u>
DATA 10, 10	S, Signal
VCC	VCC
GND	GND

<u>Arduino Sensor Shield</u>	<u>Ultrasonic HC-SR04P Module</u>
A2, ANALOG 2	ECHO
A1, ANALOG 1	TRIG
VCC	VCC
GND	GND

<u>L298N Motor Driver Module</u>	<u>DC Motor Left</u>	<u>DC Motor Right</u>
OUT1	Positive	-
OUT2	Negative	-
OUT3	-	Positive
OUT4	-	Negative

3. **Upload** provided sample code to Arduino. (***ObstacleAvoidingRobot.ino***)

### Arduino Sensor Shield Pinout Diagram



### Circuit Diagram:

