BATCH No.9

Project review

Dr. Mahalingam College of Engineering and Technology
Pollachi, Tamilnadu, India

Department of Information Technology
Hardware Project Work (2021-2025 Batch)-III Sem.

OBSTACLE AVOIDING CAR

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OUTLINE

- Abstract
- Objective
- Introduction
- Proposed System
- Hardware/Software Requirement
- Total cost of the Project
- Web References

Abstract

Obstacle avoidance and detection can be considered as a central issue in designing mobile robots.In 2020 alone, the country reported nearly 132 thousand fatalities due to road accidents.India recorded 1.2 lakh cases of “deaths due to negligence relating to road accidents”.This can be limited by the implementation of obstacle avoidance car.

Objective

To build an obstacle avoiding car using Arduino UNO , Ultrasonic sensor , Motor driver,Microcontroller etc., which allows the car to navigate by avoiding collisions which is a primary requirement.

Introduction

The obstacle avoiding car is an intelligence device which can automatically sense and overcome obstacles on its path using ultrasonic sensors .

The ultrasonic sensor transmits the ultrasonic waves from its sensor head and again receives the ultrasonic waves reflected from an object , thus detecting the obstacle

Proposed System

India recorded 1.2 lakh cases of “deaths due to negligence relating to road accidents” out of which 1214 road crashes occur everyday.These could be limited by **obstacle avoiding cars** which uses **ultrasonic sensors** for this purpose and microcontroller of 8051 family to achieve this functionality.

Hardware/Software Requirements

1. Arduino UNO
2. Motor Driver shield
3. Wheels
4. TT Gear motor
5. Servo motor
6. Ultrasonic sensor
7. BatteryBattery holder
8. Male and female jumpr wire
9. Acrylic sheet
10. DC Power switch

Total Cost of the Project

1.	Arduino UNO	600
2.	Motor Driver shield	200
3.	Wheels	200
4.	TT Gear motor	400
5.	Servo motor	100
6.	Ultrasonic sensor	100
7.	BatteryBattery holder	200
8.	Male and female jumpr wire	100
9.	DC Power switch	100

TOTAL:2000 Approx.

Web References

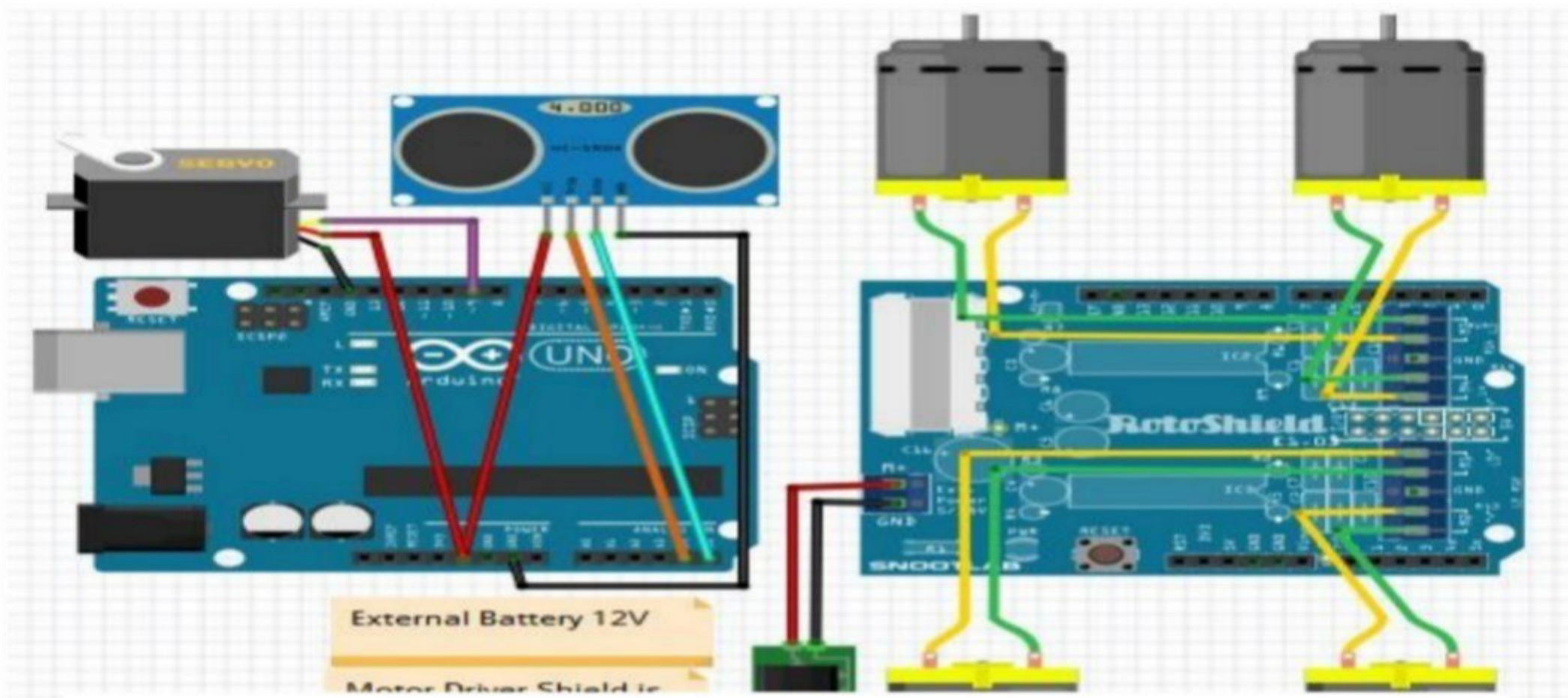
- https://create.arduino.cc/projecthub/wil_puckett15/obstacle-avoiding-car-98dbc9
- https://www.youtube.com/watch?v=1n_KjpMfVT0

QUERIES?

THANK YOU ☺

MINI PROJECT IDEA-OBSTACLE AVOIDING CAR

Obstacle avoidance and detection can be considered as a central issue in designing mobile robots.In 2020 alone, the country reported nearly 132 thousand fatalities due to road accidents.India recorded 1.2 lakh cases of "deaths due to negligence relating to road accidents".This can be **limited by the implementation of obstacle avoiding car.**



This car uses ultrasonic sensors for this purpose and microcontroller of 8051 family .The car moves forward until it sees a wall that is less than 35cm away. If this condition is met, the car backs up and the servo rotates 90 degrees to the left for the sensor to scan how far away the left wall is. The servo then rotates 180 degrees to the right to scan the distance of the right wall. If the distance of the left wall is more than the right, the car will turn 90 degrees to the left, and vice versa .In future implementations video processing using open CV could also be used.

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QUOTATION / MEMO

Date : .....

~~Node MCU~~ — 330

Motor Driver Shield — 220

TT Gear Motor (4x) — 440

Servo Motor — 130

Ultrasonic sensor — 120

Male & Female Jumper Wire — 30

DC Power switch — 10

Wheels (4x) — 180

Total : 1460

330

1130

NO GUARANTEE / NO EXCHANGE

கேரண்டி இல்லை / எக்ஸ்செஞ் இல்லை