ABSTRACT

In today's world, ROBOTICS is a fast growing and interesting field. ROBOT has sufficient intelligence to cover the maximum area of provided space. Introduces the design and implementation of an autonomous obstacle - avoiding robot car using ultrasonic wave sensor in this thesis. To build a robot that automatically detects the obstacle on its path and guides itself when there is an obstacle. It is Built using Arduino (UNO) board. An ultrasonic sensor is used to detect any obstacle ahead of it. By sending pulses, the obstacle avoidance distance can be measured. At the same time, we can control steering gear to realize the obstacle avoidance function.

The robot car uses front axle steering, rear wheel drive arrangement. Two drive tires are driven by two DC motors with gear reduction mechanisms. A L293D motor driver and 4 DC motors are used for controlling the movement of the robot. A servo motor is also used to change the direction. The ultrasonic sensor is mounted on the servo-motor. Based on the readings from the ultrasonic sensor the servo is rotated at different angles. This helps the controller to detect the exact path to navigate. A Bluetooth module is also added to control the robot from an android phone. Robot is Using Arduino UNO chip as the control core of the Robot car. Through the design of the hardware and software system, we build the robot car platform and obtain good experimental effect.