Final Year Project Report

Four wheeled zigbee controlled robot with obstacle avoidance

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Abstract

The drilling of coal mines, firefighting robot or other such application required an autonomous robot. Many types of Obstacle avoidance robots have already been created before, but with different features than our robot. For example: There is the line following and an obstacle avoidance robot, the BoeBot-C51/BS2/AVR version used for Obstacle avoidance as well as track guidance, and the Sumo robot which is used for contests. Some of them were made without any microcontroller and with the help of relays only. But the one which we liked the most was using Arduino microcontroller, L298n a specific motor driver chip and distance sensor.

The aim of the project was to create a car robot that will detect any obstacle from a certain distance and avoids it while moving in different directions and then to reach its final destination as directions given from the GUI with the use of Zigbee. The basic coding is done using the C-language on the microcontroller and C# for the controlling of the vehicle through a GUI. The hardware includes Motors, Motor driver chip, Ultrasonic sensor, Zigbee, Battery, Power supply.

The reason behind choosing this project is to help blind people detect obstacles on their ways with the aid of a robot. Thus, we believe that our project will be beneficial for various purposes and hence our efforts will be fruitful.

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