

DESIGN OF AN INTELLIGENT SECURITY ROBOT FOR COLLISION FREE NAVIGATION APPLICATIONS

ABSTRACT

Robotics industry has replaced human efforts gradually in performing rather difficult tasks. A very pertinent aspect of an intelligent security robot is to reach the goal safely by avoiding unknown obstacles in an unknown environment. Our intelligent robot which can overcome the obstacles coming in its way. We have made use of three infrared sensors to detect the obstacles via the IR communication technique. The IR transmitter sends out infrared radiation in a direction which consequently bounces back on coming across the surface of an object and thereafter is picked up by the IR receiver. Authors have applied a multi sensor integration technique to sense the obstacles using an LED based IR transmitter and receiver module integrated with the 8051 micro controller which permits collision free navigation of robots.

EXISTING METHOD

- Human help is used for operating and controlling a robot

DISADVANTAGES

- We want to give a training for the robot operator
- High cost
- Without man help the robot can't functioning

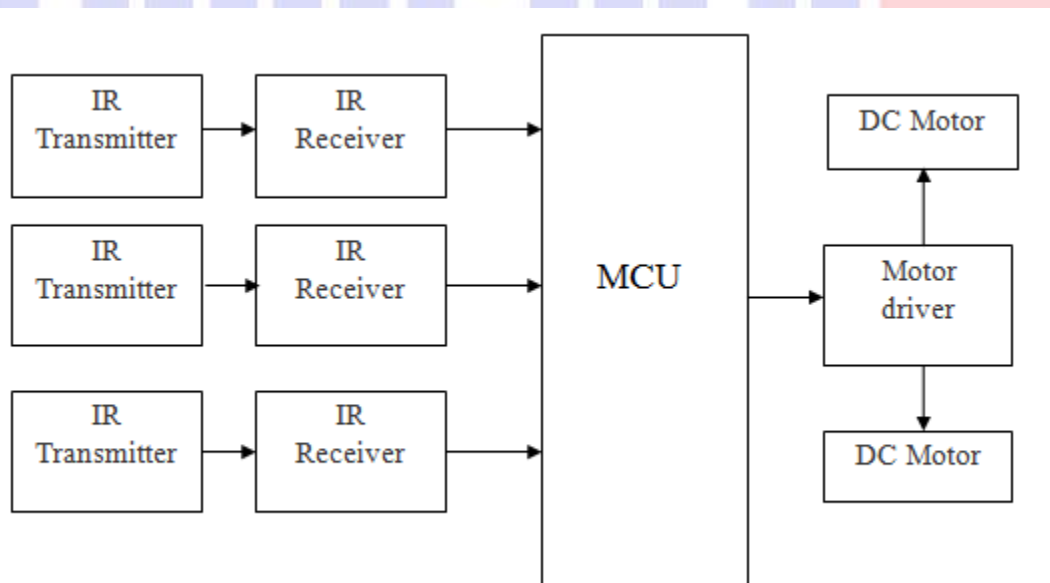
PROPOSED METHOD

- We proposed an autonomous guard robot which is able to guide visitors in daytime and do patrolling in the night by integrating service and security system.

ADVANTAGES

- A self thinking robot which skillfully makes its way through obstacles approaching its way using programmed brain without any guidance from human beings
- Intelligent security robots can play a significant role in reducing human efforts n saving a lot of time by smart sensing and navigation technique.

BLOCK DIAGRAM



HARDWARE REQUIREMENTS

- IR transmitter
- IR receiver
- Micro controller
- Motor driver
- DC motor

SOFTWARE REQUIREMENTS

- MCU COMPIERS
- PROTEUS SOFTWARE

MICROCONTROLLER may ATMEGA,8051,PIC OR Arduino