

智能避障车设计

Design of Intelligent obstacle avoidance vehicle

摘要

智能避障车是基于 51 单片机（AT89C51）为控制核心，并且用到了普通直流电机、超声波驱动模块和 L298N 电机驱动模块为主要的组成部分。普通直流电机中的齿轮箱可以提供不同的转速和力矩从而使小车行走准确；L298N 电机驱动模块能够很好的控制直流电机。超声波模块则是检测路上障碍，并且驱动传感器正常工作和传输信号的作用，超声波模块具有控制简单、易操作、灵敏度高的性能。

本次设计实验能够让智能避障小车达到躲避障碍物，进而在继续前行的功能。这次智能避障车设计的意义在于探索智能避障小车对人们生活中应用，并且致力于帮助人们拥有更好的生活体验。

关键词 51 单片机；超声波模块；L298N 电机驱动模块

Abstract

Intelligent obstacle avoidance vehicle is based on 51 single chip microcomputer (AT89C51) as the control core, and uses the ordinary DC motor, infrared sensor drive and L298N motor drive module as the main component. The gear box in the ordinary DC motor can provide different rotational speed and torque so that the driving module of the L298N motor can control the DC motor well. The infrared sensor drive module is the function of driving sensor working normally and transmitting signal. The infrared sensor drive module has the performance of simple control, easy operation and high sensitivity.

This design experiment can make the car achieve the function of avoiding obstacles and moving forward. The significance of this design is to explore the role of smart cars in people's lives and to help people have a better life.

Keywords Single chip microcomputer; ultrasonic module; L298N motor driving module

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