

基于单片机的电动小车智能控制系统的设计

摘 要 随着全球信息化进程的不断加深，物联网已成为各国发展新兴战略产业的重要领域，在我国被列为重点规划产业之一。汽车不断改变着人们的出行、生产和生活方式，给社会经济的发展 and 城市化建设提供动力。由于我国人均汽车保有量不断增长，驾驶员文明出行意识较差，导致交通事故频发，给国家带来巨大的财产损失，也威胁着居民生命安全。随着汽车尾气的大量排放，不仅加重了空气污染，也给居民的身体健康带来危害。基于此，开发出由多重传感器和无线控制器结合的智能汽车，可以辅助驾驶员驾驶汽车，减少驾驶疲劳，改变传统的能耗模式为电源驱动，减少环境污染。在无人操作和干预下的情景下完成多项任务，具有自动跟随驾驶、探测转弯超车、定点停车和倒车入库等功能。因此，电动智能小车的发展前景十分广阔。

关键词 单片机；红外传感器；超声波传感器；循迹避障；模块控制

Intelligent Control System of Electric Car Based on Single Chip Microcomputer

Abstract With the continuous deepening of the global informatization process, the Internet of Things has become an important area for countries to develop emerging strategic industries and is listed as one of the key planning industries in China. Automobiles continue to change people's travel, production and lifestyle, and provide impetus for social and economic development and urbanization. Due to the increasing number of cars per capita in China, the driver's awareness of civilized travel is poor, resulting in frequent traffic accidents, causing huge property losses to the country, and also threatening the lives of residents. With the massive emission of automobile exhaust, it not only aggravates air pollution, but also brings harm to the health of residents. Based on this, a smart car combined with multiple sensors and wireless controllers has been developed, which can assist the driver to drive the car and reduce driving fatigue; change the traditional energy consumption mode to power drive to reduce environmental pollution. Complete multiple tasks under unmanned operation and intervention scenarios, with functions such as automatic follow-up driving, detection of corner overtaking, fixed parking and reverse storage. Therefore, the development prospect of electric smart cars is very broad.

Keywords Singlechip ;Infrared Sensor ;Ultrasonic Sensorteack ;Obstacle Avoidance;Module Control

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