

毕业论文（设计）

**基于物联网环境的智能驾校管理系统**

学 院 信息工程学院

年 级 2016级

专 业 物联网工程

学 号 2016631124

姓 名 王富国

指导教师 李芳芳

完成日期

作者声明

本毕业论文（设计）是在导师的指导下由本人独立完成的，没有剽窃、抄袭、造假等违反道德、学术规范和其他侵权行为。对本论文（设计）的研究做出重要贡献的个人和集体，均已在文中以明确方式标明。因本毕业论文（设计）引起的法律结果完全由本人承担。

毕业论文（设计）成果归陇东学院所有。

特此声明。

|  |  |  |
| --- | --- | --- |
| 作者专业 | ： | **物联网工程** |
| 作者学号 | ： | **2016631124** |
| 作者签名 | ： |  |
| **20 年 月 日**（手填时间） | | |

**目 录**

[摘 要 - 3 -](#_Toc33743574)

[关键词 - 3 -](#_Toc33743575)

[Abstract - 3 -](#_Toc33743576)

[Key words - 4 -](#_Toc33743577)

[1绪论 - 5 -](#_Toc33743578)

[1.1研究背景及意义 - 5 -](#_Toc33743579)

[1.2国内外的研究现状及发展趋势 - 5 -](#_Toc33743580)

[1.3研究本课题的目的和基本内容 - 5 -](#_Toc33743581)

[2.系统总体设计方案 - 5 -](#_Toc33743582)

[2.1系统需求分析 - 5 -](#_Toc33743583)

[2.2系统总体架构设计 - 5 -](#_Toc33743584)

[3.系统开发环境搭建 - 5 -](#_Toc33743585)

[4.系统主要业务实现 - 6 -](#_Toc33743586)

[5.系统测试 - 6 -](#_Toc33743587)

[5.1系统整体性能测试 - 6 -](#_Toc33743588)

[5.2物联网平台测试 - 6 -](#_Toc33743589)

[5.3Web端测试 - 6 -](#_Toc33743590)

[主要参考文献 - 6 -](#_Toc33743591)

[后记 - 6 -](#_Toc33743592)

**基于物联网环境的智能驾校管理系统**

**王富国**

***Intelligent driving school management system based on IoT environment***

**Wang Fu guo**

**2020年2月27日**

**摘 要**

现代社会是基于是互联网的时代，是基于人工智能的时代，从当前物联网横行的社会潮流来看，探讨万物互联，顺应时代发展的规律，这是一个永恒不变的话题。从国际视角出发，人们生活水平普遍提高，汽车已经成为了家家户户必不可少的交通出行工具，各国关于驾车出行都有各种各样的条例，以我国最为典型，无证不可上路，是我国公民必须遵守的法律条例。

驾照已经成为了我们人生中必不可少的证件之一，是证明我们安全出行的保证，现代社会，驾校遍布，种类繁多，业务杂乱，随着“考证”人数的越来越多，驾校的人员管理越来越乱，经常出现了遗失学员档案，练车预约不到，教练车闲置等现象，现在网络通信技术的发展，以及物联网潮流的推进，各个驾校的管理方式越来越简单，随之而来的是学员档案的自动化管理，练车时间的自动化分配，练车时间自动定位打卡计时，智能调配等。目前流向的驾校管理系统还存在很多问题，例如预约练车系统容易崩溃、页面卡死，打卡定位计时不准确，学员信息存储不够安全，系统可维护性不高等，仅仅依靠Web端单一的管理方式，很难均衡。

论文首先对驾校管理系统的研究背景进行了论述，然后对市面上已有系统的技术进行了研究，并结合社会现状进行了分析，在此基础上构思了本文概述的系统设计，考虑到了已有系统在稳定性、可拓展性上的缺点，并对设计成果做了展望。

论文基于物联网平台与B/S架构相结合设计了管理系统，有效降低了驾校人车不能互联的弊端，同时基于STM32开发板，通过FTID技术实现了练车打卡，考勤录入等功能，RFID技术具有非接触性特点，在考勤过程中具，有唯一性的特点，加上一些数据的分析处理，可以提升集中统一化管理的效率，同时有效避免了学员间因为练车时间冲突的问题。本系统在驾校智能一体化管理方面具体明显性的作用，由于物联网范畴强大，可根据需要随时做软硬件结合的拓展。

**关键词：**物联网；STM32；B/S；驾校管理；Web；RFID

**Abstract**

Modern society is based on the era of the Internet and the era of artificial intelligence. From the current social trend of the Internet of Things, it is an eternal topic to explore the interconnection of all things and conform to the rules of the development of the times. From an international perspective, people ’s living standards have generally improved. Automobiles have become an indispensable transportation tool for every household. Various countries have various regulations on driving and traveling. The most typical of our country is the road without a license. It is a citizen of our country. Laws and regulations that must be followed.

Driving licenses have become one of the indispensable documents in our lives. They are a guarantee of our safe travel. In modern society, there are many driving schools, many types, and business chaos. With the increasing number of "examination certificate", driving school personnel The management is becoming more and more chaotic. There are often missing trainee files, inadequate training appointments, and idle coaches. Nowadays, with the development of network communication technology and the advancement of the Internet of things, the management methods of driving schools are becoming simpler. The following are the automated management of student files, the automatic allocation of training time, the automatic positioning of the training time, the timing of clocking, and intelligent deployment. There are still many problems with the current driving school management system. For example, the car-training system is prone to crash, the page is stuck, the timing of punch-in positioning is not accurate, the student information is not stored securely, and the system is not maintainable. It is difficult to balance.

The dissertation first discusses the research background of driving school management systems, and then studies the existing system technologies in the market, and analyzes the current situation in the society. Based on this, the system design outlined in this article is conceived. The shortcomings of the system in stability and scalability, and prospects for the design results.

The thesis designs a management system based on the combination of the Internet of Things platform and the B / S architecture, which effectively reduces the disadvantages of driving school cars that cannot be interconnected. At the same time, based on the STM32 development board, FTID technology is used to implement functions such as train driving, time attendance and entry, RFID technology It is non-contact and unique in the attendance process. In addition to the analysis and processing of some data, it can improve the efficiency of centralized and unified management, and effectively avoid the problem of conflicts between trainees due to train time. This system has a specific and obvious role in the intelligent integrated management of driving schools. Due to the strong scope of the Internet of Things, it can be expanded at any time according to needs.

**Key words:** Internet of things; STM32; B / S; driving school management; Web; RFID

**1绪论**

**1.1研究背景及意义**

**1.1.1物联网概述**

**1.1.2J2EE体系概述**

**1.2国内外的研究现状及发展趋势**

**1.2.1国内的研究现状**

**1.2.2国外的研究现状**

**1.3研究本课题的目的和基本内容**

**2.系统总体设计方案**

**2.1系统需求分析**

**2.2系统总体架构设计**

**2.2.1数据建模**

**2.2.2系统主要硬件设计**

**2.2.3系统Web端设计**

**3.系统开发环境搭建**

**4.系统主要业务实现**

**5.系统测试**

**5.1系统整体性能测试**

**5.2物联网平台测试**

**5.2.1RFID模块测试**

**5.2.2ESP8266通信测试**

**5.3Web端测试**

**主要参考文献**

**后记**