CHAPTER 1. INTRODUCTION

1.1 Purpose and significance of the study

The main purpose of the intelligent monitoring system of the IoT cloud platform is to centralize the data of multiple monitoring points through IoT technology and cloud computing technology to achieve intelligent and efficient monitoring and management. Specifically, the intelligent monitoring system can comprehensively analyze and mine the data through artificial intelligence algorithms and big data analysis technology to achieve accurate data analysis and prediction, which in turn improves safety and efficiency.

Intelligent surveillance system is of great significance, it can effectively solve many problems existing in the traditional surveillance system, such as the scope of monitoring, effectiveness, management and other issues, improve the efficiency and ability of supervision, and provide strong technical support for social security and operational management. At the same time, the application of intelligent surveillance system can also improve the safety and security of enterprises and individuals, reduce the waste of resources and labor costs, and contribute to the sustainable development of the economy and society.

1.2 Current status of domestic and international developments

The development trend of the intelligent monitoring system of the Internet of Things cloud platform at home and abroad is gradually developing in the direction of intelligence, cloud, integration and so on. The following is the status of its development at home and abroad:

(1) Domestic:

In China, the increasingly mature development of the Internet, cloud computing, Internet of Things and other technologies has promoted the rapid development of intelligent surveillance systems. Meanwhile, the government's vigorous promotion has also accelerated the development of intelligent

surveillance systems. At present, many domestic companies are committed to the research and development and promotion of intelligent surveillance systems, such as Hikvision, Dahua, YUVAD and so on. These companies have realized more intelligent functions, such as face recognition, behavioral monitoring, and intelligence sharing, by combining the surveillance system with IoT technology, cloud computing technology, and artificial intelligence.

(2) Abroad:

The development of intelligent surveillance system in foreign countries is slightly earlier than that in China, and it has already entered a mature stage, and the main markets include the United States, Europe, Japan and so on. At present, in foreign countries, the monitoring system mainly relies on cloud computing and IoT technology to realize a more convenient and efficient management, such as Amazon Web Services in the United States and Cisco Meraki in the United Kingdom. At the same time, artificial intelligence and big data are also widely used in intelligent surveillance systems to provide users with more personalized, accurate and efficient services. Overall, the domestic and international development of intelligent surveillance systems are gradually developing in the direction of intelligence, cloud, integration, etc. In the future, more attention will be paid to the expansion of human-computer interaction, mobile applications, and sharing economy.

1.3 Overview of the subject

This project is a remote monitoring system based on OneNet cloud platform. In the design of the host computer is the main control module, is the use of Raspberry Pi 4B as the main control module, the other data monitoring module is mainly utilized AM2320 temperature and humidity sensor module, MQ-2 smoke monitoring module. In the display module is used a LCD12864 LCD display. This design since the need to use the remote monitoring system is indispensable wifi module, the wifi module used here is a model esp8266 wifi module. Finally, an alarm module is needed, the alarm module is mainly composed of a buzzer and a red alarm light. In the whole design of the lower computer is used in the packet Tracer software simulation. After that, the data

needs to be uploaded to the OneNet cloud platform and interact with the OneNet cloud platform data. Then there is also a need for an upper computer system, which mainly realizes the ability to monitor data in real time and control the equipment remotely. In the host computer system is mainly realized by android studio software.