Research on the New normal Technology and Application of artificial Intelligence in the Internet of things

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Abstract. Traditionally, artificial intelligence is only a system that replaces human beings to realize specific tasks under specific technological conditions. However, from the perspective of the latest development, it has the conditions to integrate into the construction of new infrastructure, promote national economic transformation and development, and undertake the mission of "technological revolution". As 3GPP announced the freezing of the second version of 5G standard specification R16 on July 3, 2020, the problem of mass data, system facilities and terminal equipment interconnection has been solved at the level of communication infrastructure, which indicates that the speed of artificial intelligence technology application will be greatly improved. Intelligent science and technology has become a hot topic of technological reform in contemporary society. It not only provides necessary production tools for the development of various fields, but also becomes an important development trend of technology in contemporary society. With the improvement of technical level and the improvement of the management system, obtained the rapid development of Internet of things fields, in people life, tandem residents live in information technology, Internet technology as the core, combining information technology and items, and enhance the level of Internet of things technology as much as possible, for the life and science and technology bring more convenience.

Keywords: Artificial intelligence and computational intelligence, The Internet of things, using, application.

1. Introduction

In view of the practicability and development prospect of intelligent technology, intelligent technology is the key technology of urban science and technology reform and the improvement of residents' lives in the future [1]. It can not only bring huge economic benefits to urban production and construction, but also bring leapfrog improvement to the lives of ordinary residents. With the maturity of computer informationization and the practicability of the Internet of Things system in the current society, more

and more talents begin to invest in the research of this field. Because of the development prospect of this technology in the future, more and more professional talents devote themselves to the research of the Internet of Things and intelligence. As a result, the science and technology has made unprecedented and rapid progress [2].

Currently, it is recognized in the academic community that the Internet of Things contains three layers: the perceptual layer, the network layer and the application layer [3]. To sum up, the perceptual layer is mainly responsible for collecting information related to objects, which is the basis of the development and operation of the Internet of Things. It is mainly composed of devices capable of this task, such as camera equipment. The network layer, which is made up of Wi-Fi and the Internet, is a key layer of the Internet of Things. The application layer is mainly involved in specific application services such as agriculture and transportation, which has a strong practicality and is the purpose of the development of the Internet of Things [4]. Due to limited technology, there is still much room for progress in the development of Internet of Things technology in China, and the ways to realize its function are relatively limited. It usually consists of network sound sensor, fault alarm device, infrared camera and other equipment, and is connected to PC. At present, the prevailing Internet of Things can achieve the function that when the software is running, if it can meet the requirements of the monitoring function, the operator can communicate with the device to expand the information benefit.

2. The Technology of Internet of things and its Development status at Home and abroad

2.1. Overview of Internet of things Technology

As an important part of a new generation of computers, the Internet of Things (IoT) is based on Internet technology and can be extended in different objects to create a network between objects. The concept of Internet of things was first put forward by professor Ashton in the United States, with the help of information sensing technology contact items from all over the world, the Internet of things is the most basic part of modern information technology, on the one hand is to use the Internet to expand client, on the other hand is to satisfy items between communication, agriculture, construction and automobile industry in our country have begun to play the role of the Internet of things is known as the next 30 years the biggest technology research[5], and also will be more and more extensive application scope[6]. The key technologies of the Internet of Things include application layer, perception layer and network layer. In the sensing layer, sensing technology and wireless technology can be used to obtain information. In the network layer, mobile communication technology, PLC technology and WiFi can be generated by communication network and cloud technology. The application layer is the port connecting users' needs with the Internet of Things, which can process and analyze data and provide users with scientific decisions.

2.2. Development status at home and abroad

The Internet of Things (IoT) was first applied in the defense system of airports. With the continuous development of this technology, it is now widely used in mobile phone shopping, and its combination with mobile communication technology is also being strengthened, which fully reflects the progress of IoT technology. After 60 years of development, artificial intelligence technology has made remarkable progress in machine learning, neural network, pattern recognition and other aspects. For example, in 2016, the man-machine game of Go made artificial intelligence become the focus of the world. After that, major Internet companies began to strengthen technology research and development, constantly improving people's lives. Nowadays, the application of artificial intelligence in the construction of the Internet of Things platform caters to the development trend of The Times, and also makes the Internet of Things more intelligent and open .

3. Application of artificial Intelligence in the Technology of Internet of things

3.1. Information security technology

With the rapid development of Internet of Things technology, artificial intelligence technology and information security technology, the security of computer system and the use of information security technology have also put forward higher and higher requirements. At present, these three technologies can be connected with each other. At the same time, under the rapid development of information technology, network Trojan horse and network virus are also being updated, and the threat is also being strengthened. Therefore, the original network defense technology needs to be updated in time, and the integration of intrusion detection and risk assessment can create a more comprehensive defense system. Specifically, a large number of logs will be generated along with the operation of software and hardware in the system, and the data acquisition system can analyze these data in time, and then eliminate these viruses in time to create a more secure network environment [3].

3.2. Protect and analyze data

Because of all the digital transformations that have taken place this year and the increased online activity due to the blockade, companies will have to deal with an explosion in data volumes this year. With more 5G deployed in 2021 and further growth in LPWAN based services, the amount of data created and processed by businesses will explode. Therefore, in order to stand out from the competition, more companies will start to focus on data analytics technologies that can safely process data and analyze and derive more meaningful insights from the largely unused operational data. For example, many Covid-19 restrictions are expected to be lifted in mid-2021, meaning that hard-hit sectors such as tourism could start to grow again. However, the ability to provide an enhanced experience through better use of data is likely to remain an important determinant for many customers.

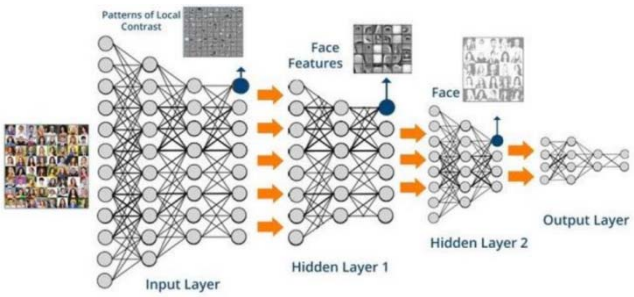

Fig.1 Deep learning algorithm architecture

The Internet of Things can therefore play a key role in helping to automate processes and make more information readily available to businesses. Devices will become increasingly "smart" and capable of driving even greater intelligence as IoT and AI become more closely intertwined and embedded deeper into organizational structures and transformation plans.

3.3. Pattern recognition

The so-called pattern recognition is the computer perception, recognition and interpretation of the complex environment, in which artificial intelligence played a fundamental role, with the help of sensors, information gathering, it is indispensable to the Internet of things platform also content, through the use of pattern recognition technology can improve the ability in information utilization and processing.

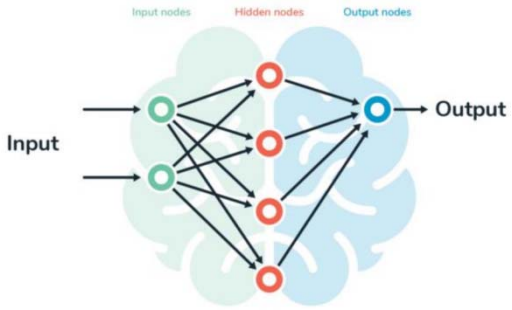

Fig.2 Machine learning algorithm

Specifically: pattern recognition technology covers speech recognition, text recognition and face recognition and other technologies, no matter which technologies need to use computer neural network to identify external signals. In addition, neural network technology has strong learning ability and can solve the problem of difficult signal recognition, so the recognition technology is a kind of artificial intelligence-based Internet of Things technology.

4. Application methods in the future intelligent era

4.1. Improve work efficiency

In terms of the development level and rate of the Internet of Things, the level of science and technology in the future will gradually tend to be intelligent. The core of the control technology of the Internet of Things will be retained. With artificial intelligence as the carrier and computing intelligence as the information processing tool, the interconnection of goods will be realized and the processing efficiency of related work will be improved. After the Internet of Things and artificial intelligence technology are put into use, there will be a large area of users. In order to improve the efficiency of the Internet of Things serving people, user ports need to be established to speed up the efficiency of information collection and processing [2].Therefore, it is necessary to expand the user port, to achieve some necessary Internet of Things work, and to timely and effectively accomplish the target tasks by virtue of the sensing ability of artificial intelligence and the data processing of computer cloud system. For example, the user input the corresponding work command in the form of voice or text, and immediately match the corresponding computing model through the cloud data platform. The processing method utilizes the control sensor to achieve the completion of the target task. Under the premise of synchronous work, the problem can be solved quickly.

4.2. Combine intelligent data processing capabilities

Iot items of information through the Internet, to achieve the function of control, and intelligent use of data platform, with the help of a data processing model to realize the solution of the problem, therefore, the intelligent technology in Internet of things, the application of inquiry should be centered on the Internet of things, intelligent processing method for the tool, realize the optimization and upgrading of the Internet of things.Combined with the results of years of research, intelligent data processing ability can not only efficiently realize the calculation of data information, but also achieve accurate processing, and speed up the control speed of the Internet for goods. The Internet, through the transformer, controls the goods at work and completes the corresponding instructions given by users.Therefore, the combination of the technical advantages of the two can greatly improve the efficiency of the Internet of Things system in responding to users' work, and optimize the requirements for the efficiency of the Internet of Things in the current information intelligent society.For example, in the artificial intelligence in the process of gradually mature, the diversification of as much as possible, will realize the function of artificial intelligence, and equipment through the Internet and control to realize the remote control connection, after the command, and at the same time for

computation model and the extraction of operation command issued, with the aid of network tools to strengthen the control ability of the Internet of things.

The application of artificial intelligence in the field of Internet of Things mainly realizes the control ability in the field of Internet of Things through programming and special command mode. In the future development direction, artificial intelligence technology mainly realizes intelligent management through programming Settings [3].The impact of artificial intelligence and computational intelligence on the technology of the Internet of Things is mainly to improve the management effect of the Internet of Things system by realizing the autonomy of objects to complete corresponding tasks. At the same time, artificial intelligence replaces human resources to complete some difficult and dangerous work. In life, the realization of intelligent life management, the use of professional control terminal, so that residents more convenient life.

5. Conclusions

The Internet of Things technology gradually tends to be intelligent, which is the inevitable trend of the development of science and technology in the current society. Therefore, for the Internet of Things, an important field full of residents' lives, it is more necessary to conform to the current technical level and manage goods intelligently. Countries are also highly attention to the development of the Internet of wisdom, in the national support, the current wisdom Internet of things has been in our family life, public service and the daily work of the enterprise and application in production, although application level is limited, but still to improve the quality of life of the people level played a very big help, but also effectively promoted the progress of market economy. It will helps them automate routine, repetitive, predictable tasks and unleash tactical advantage. These innovations will increase operational efficiency, improve the accuracy of the platform, and improve the user experience across the ecosystem.

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