Research on the Application of Artificial Intelligence in Computer Network Technology in the Era of Big Data

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Abstract: At present, artificial intelligence technology has been widely used. Artificial intelligence technology can not only enrich people's lives, effectively improve work efficiency, achieve technical development, but also improve the efficiency of enterprises, and bring rich profits for the development of enterprises. Therefore, the author systematically analyzes the advantages and disadvantages of AI technology, and expounds the application of AI technology in computer network technology from the aspects of network security technology, enterprise management technology, network system and evaluation technology.

1. Introduction

Under the background of big data era, people have been paying attention to the network information security for a long time. In order to improve the user information security, we need to ensure that the computer can have sensitive response and insight. Traditional computer technology in the information judgment[1], usually only involves a wide range of information data, but does not care whether the data itself is true and correct. Artificial intelligence technology can be deeply combined with computer technology to simulate people's thinking, screen and analyze massive information, so as to obtain useful information, judge whether the information is true or not, filter out some false information, effectively shorten space and time, improve the level and efficiency of network management through purposeful and targeted data processing[2].

2. Overview of Artificial Intelligence

Artificial intelligence is a new type of technology which uses computer to imitate human behavior and thinking mode. It has relatively strong comprehensiveness. Artificial intelligence technology involves linguistics, psychology, philosophy and other related knowledge, so as to effectively help people deal with some life problems in time and improve their living standards. As the leader of intelligent technology, artificial intelligence develops rapidly[3]. It transforms human thinking form and behavior mode into data, and input these data into computer system to simulate human life and machine automatic operation. Network technology and artificial intelligence are based on each other. The continuous development of computer network can promote the development of artificial intelligence to a certain extent. However, compared with computer network technology, artificial intelligence can better handle some unclear information, and extract some useful data from the information. After processing these data, the final information will be transmitted to Users.As shown in Figure 1.

Major categories	Professional category	Professional code	Professional name
61 electronic information	6102 computer class	Six hundred and ten thousand two hundred and seventeen	Artificial intelligence blade technology service

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Figure 1 Research approach of artificial intelligence

Under the background of big data, artificial intelligence significantly improves the correctness of data judgment and processing, and to a certain extent, it helps to improve the efficiency and speed of data processing. Its advantages are: artificial intelligence can realize the accurate processing of data, computer technology can only process some surface information, computer technology is very difficult to process for unclear and fuzzy information[4], artificial intelligence can realize the simulation of human thinking, so as to effectively handle some uncertain information, and after the processing of artificial intelligence, it can get more comprehensive and precise The right information. At the same time, artificial intelligence improves the efficiency of computer technology processing information, and improves the flexibility and effectiveness of information management mechanism[5].

Its defect lies in: at present, the rapid development of science and technology, in a sense, promotes the improvement of people's material living standards, computer network is indispensable. Therefore, the emergence of artificial intelligence has its inevitability. The development of the country, society and citizens all need artificial intelligence. Artificial intelligence brings convenience to people, but there are also many security risks. China's network operation uses relatively strict monitoring methods and builds a professional network management system. It is difficult to use computers to judge the authenticity and accuracy of information, so the data obtained is too broad and lack of pertinence.

3. Application of Network Security Technology

3.1. Intrusion Detection Technology

In the background of big data era, artificial intelligence technology is becoming more and more mature, which can independently detect intrusion behavior and realize the security control of computer network. Based on the collection and analysis of security log, network behavior and audit data, intrusion detection technology checks whether there are signs of being attacked or security policy violations in the system and network. As an active and active security protection measure, intrusion detection provides external attack, internal attack[6], misoperation and other protection methods. When the network system is damaged, it can effectively respond to and intercept the intrusion.

Intrusion detection technology can ensure that the resources in the computer network are more secure, rich and confidential. It can collect, filter and process the network data according to the specific category, so as to generate the detection report and feed it back to the user, so that the user can quickly discover the network security problems existing in the computer, and use the intrusion detection technology to monitor the actual operation of the computer network in real time, to ensure that the computer will not be attacked and improve its network performance.

3.2. Intelligent Garbage Mailbox System

People usually receive all kinds of spam in their daily life. When they look up and delete the spam, they usually spend a lot of time, which significantly reduces the work efficiency. On the basis of fully protecting the information security of users[7], the anti spam mailbox can detect and scan the messages of users, mark the spam messages, and users can deal with these messages more conveniently, effectively prevent the harassment caused by spam information, save energy and time, and significantly improve the security performance of the mailbox.

3.3. Intelligent Firewall Technology

The firewall is composed of hardware and software. It can build a protective barrier on the interface between the external network and the internal network, the private network and the public network[8], so that the internal network can be protected from infringement. The network packets and communications that the computer flows in and out of must pass through the firewall. Firewall technology can intercept the harmful information in the computer, avoid the harmful information to

the computer system, so as to ensure that the computer can operate more safely. Its security check efficiency is higher than the traditional firewall, which can solve the practical problem of denial of service, also can distinguish and process data well, effectively reduce the amount of data calculation, timely discover and deal with the violations in the network, and prevent and control the virus invasion.

4. Application of Enterprise Management Technology

With the continuous improvement of China's economic level, enterprise affairs began to increase, and artificial intelligence technology began to be widely accepted and used by more and more enterprises. With the support of artificial intelligence technology, the technology efficient management has gradually formed in the automatic monitoring management, which makes the degree of enterprise management informationization deepen continuously and improves the work efficiency effectively. With the continuous development of artificial intelligence technology, the intelligent management provided by it improves the efficiency of enterprise management, reduces the labor cost, solves the unequal relationship between investment and profit, and wins a lot of value for enterprises. Artificial intelligence can generate a set of specialized and integrated network system through the continuous accumulation of knowledge and experience in related fields, and systematic summary and analysis of these information, so as to promote enterprises to realize the efficient use of computer networks and improve efficiency. All in all, the rational use of artificial intelligence technology can not only ensure the more efficient management of enterprises[8], but also lead enterprises to the direction of intelligence and modernization.

5. Network System Management and Evaluation Technology

5.1. Artificial Intelligence Problem Solving

Artificial intelligence problem solving technology is to select the relevant steps to complete the algorithm under the given basic conditions, which involves reasoning technology, search technology and solution technology. Search technology can be used flexibly in different spaces such as problem space and state space. Different technologies are needed to explore the problem space[9]. At the same time, the corresponding search forms are used in combination with the differences between different problems to improve the search efficiency. At the same time, the technology will choose different evaluation methods to carry out the evaluation work and obtain ideal search efficiency. Using artificial intelligence problem solving technology in computer network technology can significantly realize the rational use of network resources and improve the efficiency of network resources.

5.2. Expert Knowledge Base

Expert knowledge base is an important part of expert system, which can have a direct impact on the actual operation effect of professional system. At present, the transfer of knowledge base has direct experience, indirect experience and basic theory[10]. The relevant content is transformed into coding, and stored in the database, which is generally recognized by experts. At the same time, similar management technology is selected to achieve data management and evaluation.

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