Application Analysis of Artificial Intelligence in Computer Network Technology under the Age of Big Data

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Abstract: The application of artificial intelligence in computer network technology can provide benefits for the information processing ability. Moreover, it can guarantee the high security and stability for the information, which can avoid many problems during the information processing and show the application advantages of artificial intelligence. The application of artificial intelligence in computer network technology is the argument of this paper. It is hoped that this paper can provide the reference for the person of the relevant industry.

1. Overview of Artificial Intelligence in the Age of Big Data

1.1 The age of big data.

Big Data usually means huge amount and type of data set. The traditional database can hardly manage the big data. Moreover, big data have many kinds, large scale and fast processing speed. The principal characteristics are as follows. Firstly, numerous data types. Big data is made up of many data sources and is not specific to any particular data. Moreover, under the influence of increasing data formats and sources, big data types also grow. Secondly, the extensive data scale [1] has at least 10TB overall capacity. Traditional data processing methods cannot satisfy the needs of this period. The new processing system has to ensure the convenience and rapidity of information processing capability, which is in line with the information needs of the big data era. Thirdly, highly real data. At current stage, traditional data sources have been replaced by new types of data. Data updating speed are significantly improved. Therefore, it is needed to ensure system security and stability so as not to affect the normal use and storage of data.

1.2 Artificial intelligence.

Artificial intelligence is a non-negligible part of the modern computer. It can simulate human behavior and thinking, so as to better deal with problems and simplify complicated problems. Artificial intelligence has the characteristic of highly integration. For example, it can integrate various new technologies, including psychology, linguistics and logic. Figure 1 holds the details. Artificial intelligence is also a combination of natural law and human intelligence, so it has higher advantages in function and performance [2]. At the same time, inferential capability and data analysis ability of artificial intelligence are getting stronger. By applying computer network technology, it has also developed learning ability.
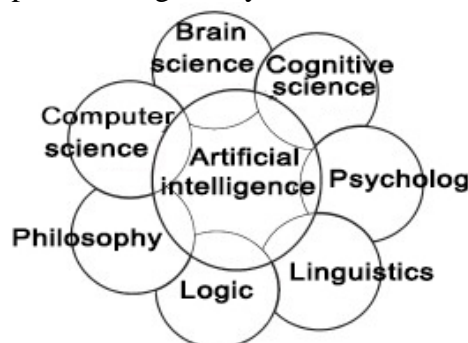

Figure 1. Artificial intelligence technology fusion

Here is an example. The man-machine game provides new requirement for the professional knowledge and competition experience of both sides. Through artificial intelligence, we can guarantee that people can achieve good results in the competitions, can deeply and comprehensively analyze human thoughts, so as to improve themselves.

2. Necessity of the Artificial Intelligence Application in Computer Network Technology in the Age of Big Data

Under the influence of the big data era, computer technology develops very fast. At present, the world pays highly attention to network information security. During the continuous application of network management system, people have been realized the importance of network supervision and control. In order to improve the timeliness of information acquisition, we can make real-time judgment and analysis on the network monitoring. In the initial stage of computer production, it is difficult to accurately judge the authenticity of the data in the computer network. Because the continuity and rules of network data are not obvious. Therefore, we have to realize the intelligent computer network technology.

At present, the field of computer development is getting larger and people's requirements for network security management standards are getting higher. All these provide a strong guarantee for information security [3]. Moreover, the global network crime has been continue unabated. In order to provide users with safe and accurate information, it is necessary to constantly improve the computer's reaction capacity and recognizing capacity. Use artificial intelligence to build intelligent management system, we can improve the information gathering ability. In addition, it makes a comprehensive and multi-angle judgment on network faults, so as to ensure the information security of users.

With the continuous development and progress of computer technology, artificial intelligence application is trending. Especially in the improvement and processing of computer data, the application of artificial intelligence technology becomes even more and more important. Artificial intelligence technology can solve the information that people cannot accurately determine in a timely manner. It can dynamically supervise and track the information that is unpredictable, and provide timeliness and accurate information to the users. It has strong information integration capability, which can ensure the steady improvement of network management efficiency. In a word, the application of artificial intelligence in computer network technology has an important role and significance, which can create favorable conditions for the improvement of network management level.

3. Deficiencies of Computer Network Technology

Although computer network technology greatly facilitates people's life, there are many weak points and gaps in the security [4]. Especially in network information security. Network control and network monitoring are the key functions of network management system. In order to give full play to the functions of network control and network monitoring, it is necessary to improve the efficiency of information acquisition and processing. Traditional computers can only calculate the data, so it is difficult to guarantee the authenticity and accuracy of the information data. Moreover, during the process of filtering data information, there will be a lag.

At present, there are more and more Internet users. To ensure the security of user information, we have to protect the network security management effectively. However, the problem of cybercrime often appears, so it is necessary to continuously improve the response ability and observation ability of the computer network, and conduct real-time monitoring of all kinds of illegal behaviors with criminal information security. Therefore, it is necessary to increase the sensitivity and intelligence of the management system [5] to ensure that the computer network can improve the automation of information collection. Only by timely judge the network failure and fully understanding of computer performance, we can guarantee the security management of the computer network.

4. The Specific Application of Artificial Intelligence in Computer Network Technology in the Age of Big Data

4.1 Network security.

In the continuous development of computer and network technology, we need to attach excessive importance to the network security. The application of artificial intelligence in the network security management can ensure good management effect. The specific performances are in the following.

4.1.1 Intrusion detection.

This is an important content of network security management and also an important aspect of network firewall technology. It has highly resistant that ensures high security and stability of resources. At the present stage, intrusion detection technology can carry out in-depth analysis of network data based on types. It can also automatically screen out unreal data information. It can feedback to users for the very first time, and take corresponding preventive measures in time. At the same time, it can also dynamically monitor the network operation and avoid network attacks and personal operation errors.

Moreover, intrusion detection technology also includes the following two aspects [6]. The first technology is the big data mining technology, which can connect computer network and host closely. It can reasonably analyze the data, and then deeply analyze the daily activities rules of the computer system, so as to timely find and solve problems and maintain the computer security management. The second technology is the artificial immune technology. In the specific application process, this technology can accurately identify the computer virus. For example, in the process of gene database operation, artificial immune technology can effectively identify the target of gene recombination.

4.1.2 Intelligent anti-spam mailbox system.

In the daily use of computer mailbox, worthless junk mail is repeatedly banned. It is not conducive to the normal use of a mailbox. However, it is difficult to solve the problem effectively by hand. Based on this condition, the intelligent anti-spam mailbox system in artificial intelligence technology can be used to deal with this problem effectively. In the intelligent anti-spam system, the automatic defense system can effectively resist the spam in the network. It brings great convenience for the mailbox usage and effectively ensures the security and stability of the mailbox.

4.1.3 Intelligent firewall.

This is quite different from the traditional defense mechanism. Through intelligent identification, we can ensure the timeliness of data collection and processing [7]. Filtering unreal data information can ease the calculation of data and ensure the steady improvement of the security level. At the same time, smart firewalls can also resist the emergence of viruses and hackers, and ensure the security and stability of data.

4.2 Network management and system evaluation.

We get the benefit from the rapid development of artificial intelligence. It is necessary to increase artificial intelligence technology and telecommunication technology during the computer network management. Through the application of artificial intelligence, we can integrate expert knowledge base and problem solving technology, build a comprehensive management system, and promote the smooth development of network comprehensive management. At present, the network changing speed is extremely rapid with high mobility, which is not conducive to the development of network management and system evaluation. However, artificial intelligence technology can effectively deal with these problems.

4.3 Agent management of artificial intelligence.

Agent management of artificial intelligence can search on the user-defined basis. Moreover, it can be transmitted to a specified location to ensure more intelligent service for users. For example, in the process of finding information of users, artificial intelligence agent management technology

can deliver information to users in time. Furthermore, it also plays its own function of analyzing and processing information, so as to avoid users wasting too much searching time [8].

At the same time, in people's daily life and work, artificial intelligence agent management technology has extensive application. Especially in online shopping, travel arrangements and other aspects, which can provide good service for users and win high satisfaction from users.

4.4 Agent technology.

Agent technology has many different characteristics in the architecture. In the practical application process, strengthening the application of Agent technology has a great effect on the processing of data information. It can create favorable conditions for the computing efficiency improvement of traditional computer network and solve the problem of network congestion. For example, through the Agent technology, we can combine the user's schedule information behavior to analyze and process the information under the users' requirement. Then transmit the query information in time and integrates it into the user terminal, save time and energy that wasted during information and data query.

5. Conclusion

In conclusion, in the age of big data, we must attach highly attention to the application of artificial intelligence in computer network technology. We should fully demonstrate the application value of artificial intelligence and upgrade the computer network technology to a new height and depth. Moreover, we need to ensure the safe and efficient operation of the computer network, so as to achieve the sustainable development goal of modern science and technology.

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