

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

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**Abstract:** This paper starts with an overview of the basic implications of AI technology. It starts from three aspects: ensuring the safe operation of the network, providing convenient conditions for network management and shortening data processing time. It analyzes the application role of artificial intelligence in computer network technology, and taken into account this, puts forward the application countermeasures of artificial intelligence in the era of Big Data...

**Keywords** the age of Big Data, artificial intelligence, computer network technology, application

## INTRODUCTION

As a product that formed under the background of network technology, communication technology and computer technology, artificial intelligence presents strong data processing capability in the era of Big Data. Therefore, through the comprehensive application of artificial intelligence technology, the phenomenon of weak information data can be alleviated. At the same time, it can find out the problems in the process of data processing and put forward corresponding countermeasures. Moreover, improve data processing efficiency while guaranteeing its safety. In the computer network technology, the application of artificial intelligence technology not only can deal with various problems in the current computer network technology, but also can realize the healthy development of society, which plays a realistic role in improving China's social and economic development.

## BASIC OVERVIEW OF ARTIFICIAL INTELLIGENCE TECHNOLOGY

From the perspective of artificial intelligence, it mainly talks about the process of computer programming in which specific code is input, so that the computer can think like a human and guide it to deal with some relatively tedious data information. Moreover, the computer cannot only think according to human thinking mode, but also think independently in various senses, so as to imitate human senses and thinking mode [Wu, 2018]. In this situation, AI technology can handle all problems with high standards and high requirements. In addition, AI technology will be greater in some respects to computer technology, even though it is mainly optimized according to the development of computer technology. Moreover, in terms of comprehensive analysis, AI technology is more rigorous and normative. At present, many professionals have

applied artificial intelligence technology to computer network technology. In this case, it cannot only effectively alleviate the work intensity, but also ensure the stable operation of the network, so as to improve work efficiency and quality. The schematic diagram of artificial intelligence technology is shown in figure 1:



Figure 1 Schematic diagram of artificial intelligence technology

## APPLICATION OF ARTIFICIAL INTELLIGENCE IN COMPUTER NETWORK TECHNOLOGY

### Ensure the safe operation of network

At present, computer network technology has been extensively used in our life and work. And in real life and work, a lot of links to all have a certain connection with computer technology. At present, China's economic level is being improved comprehensively, so that relevant personnel in various fields have strict standards in the application of computer network technology.

### Provide convenience for network management

In the 21st century, computer network technology has been continuously developed. As the international use of Internet technology has become increasingly close, the distance between countries has been narrowed, and the communication of high

frequency and high technology has become increasingly strict. The level of economic development of each country has been greatly improved. Therefore, the degree of reliance on network technology is closer and the demand keeps increasing. This results in the complexity and optimization of computer and network technology framework, which provides conditions for the integration of artificial intelligence technology [Lu, 2018]. By virtue of functional division and management ability, artificial intelligence technology enables the information network to be sorted out scientifically and coordinates the correlation among various systems according to applicable standards. It can be seen that artificial intelligence technology play an important role in computer network technology.

### **Shortening data processing time**

In the context of Big Data, each country has given full attention to network information security. At the contemporary stage, information advantage becomes more and more prominent. Therefore, in the process of the overall development of network technology, a perfect network management system is gradually formed. Network technology is a platform to provide conditions for information sharing. Some criminals will use network vulnerabilities to steal other people's information. Network management system has been widely concerned in numerous fields, and its security problem has also been concerned. However, blindly with network management mode is unable to get an ideal effect, the security problems from the aspects of technology necessary to deal with. For example, in the assessment of information authenticity, it would be impossible to utilize computer technology alone. It can only process information in general, no matter whether the information has authenticity or not, computer technology has strong indirectness and is irregular [Ren, 2018]. However, by applying artificial intelligence technology to computer network technology, artificial intelligence can adapt human thinking mode to conduct data processing, so as to obtain accurate data and evaluate the accuracy of information. If not, filter it out. In terms of information processing, artificial intelligence can conduct targeted processing of data to shorten data processing time.

## **ARTIFICIAL INTELLIGENCE APPLICATION TO COMPUTER NETWORK TECHNOLOGY IN THE AGE OF BIG DATA**

### **Network security management**

#### **(1)Intrusion detection**

Intrusion detection technology, as an indispensable part of firewall technology, is likewise the core content of network security management. Applying artificial intelligence technology to an intrusion detection system, we can take the working experience of computer application personnel as evidence and

form a unified computer reasoning system. The characteristic that caters to intrusion standard is changed into computer code, build the perfect database, judge the circumstance of external invasion by this, evaluate its type and risk, and then ensure whole network security. Applying artificial intelligence technology to the intrusion detection system can effectively improve the security of countless resources of the computer system and create a safe environment for its application. At present, artificial neural network system and expert system are utilized in the intrusion system, and the obtained effect is more remarkable. It has a good effect on the security and stability of network data. They are classified according to their specific characteristics and combined with the established database to read and intercept the information data, and the test results are directly fed back to the user to improve the security of the user network and ensure the security and rationality of the data [Gu, *et. al.*, 2016]. In addition, intrusion detection technology can monitor users' network operation in real time, prevent them from being attacked by foreign attackers, and remind users of the adverse effects caused by operational errors to provide security protection.

#### **(2)Intelligent firewall**

As a non-technical system, firewall can effectively intercept the unsafe data of computer and network system in the operation of computer, so as to reduce the impact of bad data on computer and ensure the security of computer operation. The application of artificial intelligence technology to the firewall can guide it to the screening of data information. In the process of data collection and integration, dangerous data are intercepted through the application of artificial intelligence technology, so as to reduce the amount of calculation and ensure the safe operation of the computer while the data security. In addition, intelligent firewall technology can monitor the operation of network systems and improve their security efficiency. It can not only deal with the external attack phenomenon and avoid the intrusion, but also prevent the computer system from being invaded by hackers, improve the security and stability of the network system, and avoid the spread of viruses, which has a strong application value for improving the network security.

#### **(3)Smart anti-spam**

In the process of applying computer mailbox, numerous users have received spam. At the same time, they receive junk mail at irregular time and for a long time. On the basis of influencing users' smooth application, it has affected users' application feelings. The application of artificial intelligence technology enables the computer to have a strong intelligent anti-garbage processing function. In the intelligent spam mailbox system, the use of artificial intelligence technology to track the spam situation. It checks the type of spam mailbox and intercepts it to prevent users from being affected by spam. Then, a large amount of classified information can be formed so

that users can accurately identify various information and ensure the security and stability of emails.

**Systematic evaluation and network management**

The application of artificial intelligence technology in network management and evaluation can establish a unified management system by relying on expert knowledge base and solution technology, so as to scientifically manage the network system. The network has certain dynamics and transitivity, and the application of artificial intelligence technology can give full play to its network management function, so as to reduce the intensity of network management and promote the

intelligent network management. Through the use of professional work experience and relevant knowledge, build a sound expert system, evaluate the problems in the previous computer network, and put forward corresponding treatment suggestions. Under the effect of artificial intelligence technology, the improvement of network security management level is promoted [Ma, 2015]. The application of artificial intelligence technology to expert system can effectively improve the quality of network security management and promote the future development of computer network technology. Figure 2 for intelligent network management:

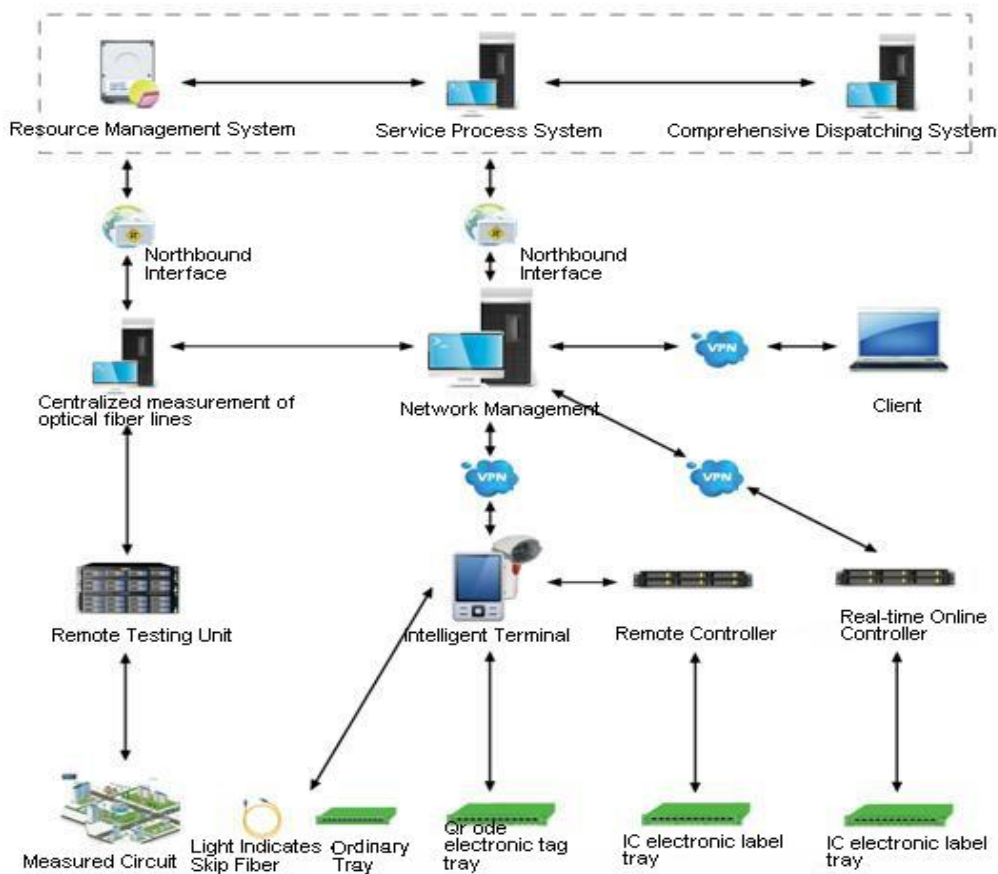


Figure 2 Intelligent network management

**Artificial intelligence agent management**

As a substantive system, the agent of artificial intelligence involves knowledge base and reasoning system. Taking user-defined setting as the standard, artificial intelligence can replace management analysis, data processing and so on, so as to complete various tasks proposed by the user, thus providing a superior intelligent environment for the user. Artificial intelligence agent management technology can provide conditions for users to process and analyze data in the case of user's application habit.

After that, the data will be transmitted to the corresponding location, and the user's instructions below will be better implemented while the environment is created for the user to look up [Wu, 2015]. Artificial intelligence agent management technology has strong automaticity and learning, which have been widely used in our real life. This not only facilitates people's life, but also promotes the stable development of computer technology and plays a realistic role in the reform and development of computer technology.

## **SUMMARY**

To sum up, in the context of big data, computer technology has been widely used in our actual life and work, and people's demand for computer application will gradually increase. In this case, we need to comprehensively promote the stable development of computer network technology, promote its intelligent construction, provide conditions for the expansion of information transmission capacity and efficiency, and promote the improvement of the application level of a computer network. Applying artificial intelligence technology to computer network technology, we can deal with the phenomenon of weak intelligence. At the same time, more accurate and specific data analysis and processing can be conducted. The application of this artificial intelligence technology in network security management can effectively enhance the security of computer network, provide convenience for people's life and work, and promote the healthy development of China's computer network technology.

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