THE INTEGRATION OF ARTIFICIAL INTELLIGENCE IN COMPUTER NETWORK TECHNOLOGY

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Abstract: With the continuous development of science and technology, people are increasingly dependent on network communication. Under this trend, current network technology and simple data computing functions can no longer meet people's requirements, and artificial intelligence has increasingly become the main trend in the innovation and development of computer network technology. The application of artificial intelligence to computer network technology can further improve network security and network management and monitoring levels. The article analyzes the defects existing in network technology and the application of artificial intelligence in computer network technology.

Keywords: Artificial intelligence; Computer network technology

1 INTRODUCTION

Artificial intelligence has penetrated into every corner of life. In people's lives and work, more and more intelligent electronic products have appeared and occupied an important position. The most common ones are smartphones and smart TVs. Artificial intelligence has an unprecedented and far-reaching impact on human society. It is not only one of the driving forces of the fourth industrial revolution, but also an inevitable necessity for the development of the information society. At the same time, new requirements for computer network technology have also emerged, and it has become possible to apply artificial intelligence to network security, supervision and management.

2 OVERVIEW OF ARTIFICIAL INTELLIGENCE TECHNOLOGY

Artificial intelligence is a comprehensive subject that involves many aspects, including computer network technology, psychology and even philosophy. It is a challenging compound high-tech. Its purpose is to allow machines to imitate people and humanize their intelligence by simulating people's consciousness, behavior, thinking, etc. It is to allow machines to do intelligent work that only people could do in the past in life and work, to complete some complex and Mechanical, high-risk, etc. work. The autonomous learning ability of artificial intelligence technology, when applied to computer networks, can enhance the identification and analysis capabilities of data information, and better realize data integration and resource sharing among users. It uses logical reasoning mode to fuzzify information, which can improve the level of computer network processing data information and serve mankind in a more efficient and humane way.

3 PROBLEMS EXISTING IN NETWORK TECHNOLOGY AT THIS STAGE

In an information networked society, the Internet is filled with massive information. With the popularization and application of information networks in the whole society, the Internet will become larger and larger. The security of network information, rationalization of the network, and humane supervisors and management will continue to attract people's attention.

3.1 Network Security

With the development of information technology, e-commerce, electronic money and online mobile payment have become mainstream, and as a result, cyber crimes have gradually increased. To protect users' network information security, it has become inevitable to strengthen the computer's protection system. 1) Vulnerabilities in computer network operating systems. In computer networks, network security risks caused by vulnerabilities caused by operating system errors are common. Today's operating systems, whether Windows or iOS, have security vulnerabilities. The operating system occupies a relatively important position in the entire computer network. Due to the loopholes in the system itself and the influence of various factors, some computer network security problems have been caused. Different types of devices and different versions of the same device will have different security vulnerabilities. It is precisely the existence of loopholes in computer operating systems that allow some criminals to take advantage of them. 2) Malicious viruses that exist in computer networks. Computer viruses are specially-written programs that are highly infectious, destructive, and capable of self-replication. Viruses typically spread through hardware devices and network data. Viruses invading computer networks can cause computer operation speed to drop sharply, system resources to be

severely damaged, paralysis of the operating system in a short period of time, information and passwords, etc. to be maliciously changed and destroyed, resulting in the loss of data and files, and computer crashes. Or hardware damage, etc. 3) The openness of the network and malicious attacks. In the era of big data, any user on the Internet can easily access information on the Internet, making it easy to obtain information about a company or even an individual. In this network environment, it is inevitable that the network will be invaded or maliciously attacked. Without strict regulations on the openness of network information and a strict protection system, computers may often be subject to malicious attacks.

3.2 Network Management

Network management refers to monitoring, controlling and recording the status and usage of network resources so that the network can operate effectively and provide users with a certain level of electronic information services after integration and analysis. In the era of big data, huge amounts and types of data are generated every day. The ever-increasing amount of data information is the source of big data aggregation and integration. However, as the amount and type of data information continue to increase, how can computers mine useful information and apply it to information security and management to promote the improvement of computer network security management levels. How to correctly and effectively process big data and apply it to human life still requires continuous exploration.

3.3 Network Monitoring

Computer networks have been popularized and penetrated into all levels of society, bringing convenience to society but also causing security and management problems. Some people are paid but do nothing, which not only consumes company resources, but also affects the company's efficiency, leaks company secrets, and even loses the company's important customer resources. Using network monitoring and integrating it with the enterprise's internal management mechanism can effectively improve work efficiency. But the problem that comes with it is that users feel that their privacy has been violated and they feel insecure. People feel that they are living in a world without personal privacy.

4 APPLICATION OF ARTIFICIAL INTELLIGENCE IN COMPUTER NETWORK TECHNOLOGY

As people rely too much on the Internet, they urgently need more intelligent services. The application of artificial intelligence in computer network technology has become possible and applicable to various fields, better improving the level of network technology.

4.1 Artificial Intelligence Applied to Computer Network Security

Because the phenomenon of cybercrimes is gradually increasing, in order to protect users' network information security, it is necessary to strengthen the computer protection system, improve the system's information acquisition and information processing capabilities, and establish a more sensitive system to realize automatic collection, diagnosis and processing of data. Analysis in order to respond to problems quickly and timely to ensure the normal operation of the computer system. Therefore, the application of artificial intelligence will become inevitable. Artificial intelligence summarizes the behavioral patterns of different modes and proposes an intelligent automatic protection method, which potentially protects your computer.

Such as the current intelligent firewall system. Traditional firewalls use a one-by-one matching algorithm, which requires a large amount of calculation and is inefficient. The smart firewall is smarter and smarter. It uses statistics, memory, probability and decision-making methods to determine the probability of whether it is malware by analyzing huge data samples. Intelligently identify malicious data traffic, effectively block malicious data attacks, effectively cut off malicious viruses or attacks, and guard against malicious attacks. There is also the intelligent anti-spam scam call, which intelligently compiles a list of malicious calls through the analysis of big data and user feedback. When such calls call your phone, your mobile phone system will automatically prompt the user to refuse to answer such calls.

4.2 Artificial Intelligence Applied to Network Management

Artificial Intelligence Agent technology refers to distributed artificial intelligence, that is, a program that simulates human behavior and relationships, has certain intelligence, and can run autonomously and provide corresponding services. Nowadays, artificial intelligence Agent technology has been widely used in daily life. Agent technology can actively provide users with the information they want to know, or proactively notify users of relevant information. It can proactively guide various standardized and programmed processes or progress plans, process and evaluate various work progress reports, and centrally integrate and process and analyze various data so that it can be presented to people more intuitively. It has the characteristics of autonomy, initiative, interactivity, etc., and it can serve users in a more intelligent way. Users can also rely on Agent technology to selectively and permanently delete certain personal

information, protect their privacy, and manage their network information. It can even be applied to companies and society to manage network resources in a more humane way. Based on network management protocols, the importance of artificial intelligence in network management has been recognized. People are gradually using intelligent management technology in the five network management functional areas of effectiveness management, configuration management, billing management, performance management, and security management.

4.3 Artificial Intelligence Applied to Network Surveillance

Network data resources are very large and discontinuous, and it is difficult to find the inherent laws in them through conventional data analysis. In this case, artificial intelligence is used to make accurate judgments on the effectiveness of data resources. Relying on artificial intelligence, based on the analysis of big data, intelligently select useful information, discard information that has no practical use, and deeply explore the potential value of information. Finally, valuable information is obtained and delivered to users, which can effectively save users' time and improve efficiency.

Conclusion: In summary, with the continuous development of artificial intelligence and the continuous expansion of its applications in many fields, while bringing convenience to society, we must also pay attention to the simultaneous development of the width and depth of artificial intelligence. The application of artificial intelligence in computer network technology is mainly reflected in intelligent Agent technology, network monitoring and management, and network information security, which can effectively improve the security of user data and ensure the normal operation of the user's system. Continuously strengthen the intelligence of artificial intelligence, improve its degree of intelligence, improve network security, promote the improvement of network management and monitoring levels, and achieve innovative and sustainable development of computer networks.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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