Discussion on the Application of Artificial Intelligence in Computer Network Technology

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Abstract: The world is on the eve of large-scale emerging science and technology revolution, and the important force leading the progress of the emerging science and technology era is a series of computer communication networks based on artificial intelligence and intelligent high-speed wireless communication networks represented by 5G. The development of computer technology has promoted the development of all walks of life, and the emergence of artificial intelligence has further promoted the change of computer network technology, and brought a series of chain reactions. The combination of artificial intelligence and computer network technology can effectively optimize the performance of computer network technology and expand the value of computer network technology. Based on the brief introduction of artificial intelligence technology and computer network technology, this paper discusses the application of artificial intelligence technology in computer network technology.

Key words: Artificial intelligence; Computer network technology; Application strategy

Based on the support of the Party and the government, China's science and technology and economy develop rapidly, a variety of advanced technologies continue to emerge, especially artificial intelligence is riding on the east wind of China's economic and scientific development, with the support of national policies to show a rapid development momentum, becoming an important tool for countries to seize the commanding heights of science and technology and revitalize the nation. Artificial intelligence technology has a strong learning ability and collaborative control ability, which provides new impetus for economic development and technological reform. But from the actual situation, the combination of artificial intelligence technology and computer network technology, there are still some details, in this case, it is imperative to carry out research on this.

I. Artificial intelligence technology

Artificial intelligence technology is a technology that realizes human intelligence with the help of ordinary computer programs. It simulates people's thinking mode, behavior characteristics and decision making through program simulation and data comprehensive analysis. Based on artificial intelligence technology, our production and life are transforming in the direction of intelligence. Artificial intelligence technology first appeared in the 1960s, after a long development, artificial intelligence technology has gradually matured, and has been more and more widely used, providing strong support for modern industrial production, human life and so on. From the core of artificial intelligence technology, artificial intelligence not only includes modern information technology, but also integrates a variety of disciplines such as psychology, linguistics and statistics. It has the characteristics of complexity, systematics and high difficulty, and also has the universality that can not be ignored. It can play an important role in many industries. At present, the biological intelligence developed by the application of artificial intelligence technology can simulate the human body's vision, touch, hearing and other sensory systems, which has played an important role in the development of the medical field and the security field, and has immeasurable value for the development of modern society. To some extent, artificial intelligence is based on computer network technology, and at the same time promotes the further development of computer network technology. In the information age, how to better promote the integration of artificial intelligence technology and computer network technology, and provide further help for the development of human society has become an important topic for the majority of technical personnel to study. Due to the high technical complexity and short development time, the application of artificial intelligence technology in computer network technology needs to be further explored.

II. The application of artificial intelligence in computer network technology

1. The practical application of computer network security management

The Internet platform is obviously open, people can share information through the Internet platform, but at the same time, information security problems also occur. Hackers and lawbreakers deliberately attack and destroy networks, steal information, and bring hidden dangers to production and life safety. Artificial intelligence technology provides important technical support for the complete maintenance of computer networks, and is a common measure in network security. For example, the combination of artificial intelligence technology and firewall technology enables the system to automatically intercept potential risks and effectively ensure the security of computer networks. Based on artificial intelligence technology, the performance of the firewall has been upgraded, and a higher level of thinking ability and judgment ability has been developed. It can not only intercept risky programs and illegal operations, but also proactively identify and deal with computer viruses and network attacks. Compared with traditional firewall technology, it has more outstanding application value.

In addition, the expert system based on artificial intelligence technology also provides an important boost to network security. The expert system can simulate the way of human thinking and decision-making, and has the functions of knowledge application and logical reasoning. It can deal with computer security problems intelligently, and give professional opinions and solutions. Set up an expert system in the computer network security management system, based on the judgment of the expert system, adopt more targeted network security

guarantee technology, and formulate a more comprehensive network space security defense strategy. The expert system has a strong ability to analyze knowledge and theory, and can give the correct judgment and decision of network security. Expert system is essentially a kind of technical means based on the learning ability of artificial intelligence technology, and the scientific nature of its decision depends on the rationality of the database it refers to to a large extent. Therefore, to improve the scientific nature of the expert system, it is necessary to further build a more perfect database to ensure the fullness and accuracy of the knowledge base.

2. The practical application of intrusion detection

Intrusion detection is one of the important contents to ensure computer network technology, including network access rights, information exchange rights, etc. It can judge whether the operation and procedure have security risks by analyzing external information, and then reject the application for data exchange at the first time, even in the transmission process, it can automatically stop the information data exchange on the basis of immediately identifying security problems. At the same time, the system determines that after a certain operation is a program intrusion, the system can automatically start the security protection system to avoid external risks.

With its strong learning and simulation capabilities, artificial intelligence technology has improved the performance of intrusion detection, and can accurately identify potentially risky systems in complex network environments and a large number of dangerous sources, and maintain good performance in long-term high-intensity operation environments.

At the same time, artificial intelligence technology also improves the identification ability of intrusion detection system, the access identification speed is greatly improved, and the false alarm rate is also greatly reduced. Technicians integrate the old and new knowledge according to the feedback information of the database, and simulate the decision-making behavior on this basis. The artificial intelligence system includes big data processing system, isolated point detection system, feedback mechanism and continuous learning module, etc. With the continuous increase of data, the self-improvement function of the system is also continuously enhanced, fundamentally optimizing the effect of computer network intrusion detection. According to the feedback data, it can be known that the accuracy rate of intrusion detection after applying artificial intelligence technology is more than 85%, which is 2.92 times higher than that of ordinary detection. The application value of artificial intelligence can be seen.

3. Intelligent analysis of data and information

In the era of big data, the accurate interpretation of data information has become a major difficulty in the development of computer networks. In the face of massive data, ordinary computer network data analysis function can not meet the demand for data reading, while the application of artificial intelligence technology optimizes the accuracy of data analysis of computer network technology. For example, Agent technology can realize complex data search, transmission and analysis functions. Agent technology is a representative artificial intelligence agent technology, which can realize the data call and comparison of different databases and knowledge bases, and realize the full exchange of data information. In practical applications, Agent technology can accurately identify people's data needs, and quickly extract the required database data and upload it to the specified location, improving the search efficiency of massive data. Agent technology also has a data reminder function, which can save and timely remind the schedule, meeting and other information according to user needs, and promote the computer network data analysis application to achieve leapfrog development.

4. Application of information processing system

Computer network technology provides people with information processing functions, and its powerful computing power and storage capacity lay the foundation for the development of modern production. And the appearance of artificial intelligence technology promotes the upgrade of computer network technology, making its information processing function more superior. For example, the artificial neural network formed by imitating the human neural network has more powerful data operation ability, and can simulate the human thinking mode to carry out independent learning, decision-making and execution. Artificial neural network enables computer network to further enhance the processing speed of information data, which can simultaneously process large amounts of data information, and realize automatic diagnosis and self-improvement of the system. Artificial neural network stores data information. With the increasing number of data standard samples, artificial neural network can conduct further learning and training based on data samples. The development of more prominent data information processing capabilities.

5. Practical applications of intelligent computing

The intelligent operation developed based on artificial intelligence technology can realize high-precision automatic operation, which provides important support for the development of modern production. Entering the information age, the competition of all walks of life is becoming more and more fierce, and computer network technology has become the basic technology relied on by the development of all walks of life. The computing efficiency of computer network has become a key factor affecting the development of the industry and the competition of enterprises. At the same time, with the continuous improvement of the amount of computation and the continuous expansion of the scale of production and operation information of enterprises, the computing load of computer network platform is also increasing. The intelligent operation developed based on artificial intelligence technology has improved the operation speed and accuracy, providing strong support for the progress of the industry. The application of artificial intelligence technology to the computer computing process can effectively solve the above problems, technicians through the combination of artificial intelligence technology and computer network management, to ensure the efficiency and accuracy of intelligent computing, to a certain extent optimize the quality of computer network management work.

6. Application of network link optimization

The modern Internet based on computer network technology is mainly based on the four-layer structure represented by the TCP/IP

protocol cluster (or the seven-layer protocol proposed by IOS) as the prototype framework, and all the artificial intelligence applied at this stage is also derived from the TCP/IP protocol cluster. Therefore, the artificial intelligence technology applied to the computer network system will also revolve around the four-layer framework planned by the TCP/IP protocol cluster. Through gradually intelligent network management, statistical analysis of network traffic, according to the changes of traffic peaks and valleys, dynamic planning and configuration of network bandwidth resources. In the search and treatment of network problems, artificial intelligence can help technicians find the root cause of the problem faster and more effectively, and put forward the most reasonable solution. Moreover, AI's memory and analysis ability are far superior to that of humans. Based on these functions, artificial intelligence can automatically store and analyze the user's search terms and search terms, and then determine the user's preferences and network usage habits, and on this basis, recommend the content that may be attracted to each user through the calculation results. For example, software platforms such as Taobao APP and Tiktok, launched by online companies such as Alibaba and Dance Byte, use AI to realize big data analysis to provide tailored content for each user.

7. Artificial Intelligence agent management software

Artificial intelligence agent management software is an emerging concept, is the integration of artificial intelligence technology and computer network technology, to a certain extent, artificial intelligence agent management software can be considered as the result of optimizing management software through artificial intelligence technology, this new type of software has information data collection, processing, analysis and other functions, under the influence of artificial intelligence technology, The whole process presents the characteristics of smooth and fast, compared with the traditional manual processing method, the superiority of its application is obvious. At the present stage, intelligent agent management software has been widely used, people can use artificial intelligence agent management software for weather queries, automatic product recommendation, travel arrangements, etc., which brings new possibilities for the improvement of people's quality of life.

Epilogue

Artificial intelligence will become a new force to drive the development of science and technology and economic growth, in the high-tech industry continues to make new achievements today, the use of artificial intelligence technology to innovate the application of computer network technology, is an inevitable requirement to solve the development problem. In addition to the application of artificial intelligence technology to data information intelligent analysis, information processing system, intelligent computing, artificial intelligence agent management software, biometrics and computer network monitoring and other aspects, it is necessary to further explore the specific application direction that meets the needs of social development and is effective, so that artificial intelligence technology plays an increasingly important role in modern society.

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