An Analysis of the Application of Artificial Intelligence in Computer Technology

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Abstract: With the rapid development of Internet, today artificial intelligence (AI) has gradually entered people's life and brought about changes to many aspects, such as people's daily work, life and study. In the development process of all walks of life, there are times when AI replaces labor. AI can realize fine management and play a crucial role in promoting the development of enterprises, while reducing the operating cost of enterprises. For computer technology, an indispensable and integral part of current social development, it has become an inevitable trend of times to incorporate AI in it. Thus, combined with reality, this paper will analyze the effective application of AI in computer technology, with a view to provide a valuable reference for relevant work in the future.

1. Introduction

Under the historical background of constant socioeconomic growth, the scientific and technological level in China continues to grow and bring about many changes to people's daily life. As an indispensable and integral technology in people's life and production, computer technology can solve problems in a more accurate way by incorporating AI in it. Backed by its own big data analysis and processing abilities, computer technology can better predict and handle relevant problems, improve the fineness degree of work, ease the burden of technicians and is thus of extremely high application value. Hence, it is very essential to analyze the effective application of AI in computer technology, in combination with reality.

2. Overview of AI

2.1. Overview of the Development of AI

Generally, AI refers to the process of simulating the thinking, consciousness and other aspects of human beings, that is to say, a machine is able to think in various ways using the same brain as humans. Meanwhile, it has a huge memory and computing speed, and is able to calculate various data in an efficient way. In practical use, AI involves many fields and disciplines, such as math, computer science, information science and cybernetics, etc. and even includes psychology and philosophy, etc., so it brings great convenience to people's daily life. However, in the development process of AI in China, there are still some problems to be solved, because domestic study on AI is still in its infancy.

2.2. The Advantages of AI Technology

At current stage, AI has been widely used in computer technology, made a great breakthrough and built a communication network, which lays a good foundation for the all-round development of computers.

On the one hand, the application of AI in computer technology allows predicting and handling some uncertain and unknown problems, collecting, analyzing and monitoring information contained therein, and ensuring the efficient operation of the system. On the other hand, by applying AI technology, we can manage the Internet environment more effectively by means of polling, fulfill effective monitoring at various levels, thereby better solve the problem of collaboration, introduce smart technology to it, establish a thinking of multi-agent collaboration, improve mutual cooperation in hierarchical technical management and lay a good foundation for the normal running of system. Moreover, the learning and inferential abilities of AI can better help improve the

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operating efficiency of computer network. As the AI technology itself has strong learning and inferential abilities, it can infer high-level information, by learning low-level information, and control high-level information in an effective way, so as to improve the technical level of computers.

3. The Specific Application of AI in Computer Technology

From the above analysis, the application of AI in computer technology has become an inevitable trend and a significant embodiment of the development of the sci-tech era. At present, the application of AI in computer technology is mainly embodied in the following aspects:

3.1. Intelligent firewall technology

Although in actual use, a traditional computer also sets up a firewall, the safety performance is weak and the computer is extremely vulnerable to outlaws and susceptible to the attack of hackers and viruses. By setting up an intelligent firewall, we can intercept harmful information to the greatest extent, protect the privacy of users and build a safe network environment for them. This new intelligent firewall technology makes changes and improvements based on the traditional firewall technology, and can identify and protect information automatically. It can give an effective solution to the problem that some software denies firewall services, so that common computer viruses won't be able to break through the firewall and access the computer. In this way, the safety of computer is guaranteed. Nowadays, this kind of intelligent firewall technology is more widely used in enterprises, and plays a very crucial role in the safe operation of enterprises and the protection of important information. In doing so, enterprises can avoid potential economic losses. This also fully demonstrates the necessity to use this new intelligent firewall technology, which has a very high application value and development space, and meets the development demands of current era.

3.2. Artificial immune technology

This kind of technology mainly simulates the immune function of human beings, thereby developing an effective immunity against computer viruses. First of all, this kind of technology can integrate a variety of gene pools, clonal selection and negative selection mechanism in an organically way, improve some defects existing in the actual application of traditional detection technologies, such as low resolution, weak anti-virus ability and low validity, etc. Secondly, this artificial immune technology can effectively monitor, identify, prevent and control some unknown virus types, by analyzing the segments in recombination gene pools. It shall be noted that this technology can generate character strings randomly during use and interfere with the negative selection mechanism. There is room for further improvement in the future. Apart from this, the artificial neural network is also a kind of application form of AI similar to human nervous system. With the aid of the learning ability of AI, it can effectively monitor and respond to computer network. However, subject to the faultiness of the technology proper, this system generally has to be combined with the intrusion detection technology. It is also applicable to the recognition of input patterns of distortion and noise. Influenced by the compatibility between artificial neural network and computer network, this technology can be widely applied in the computer network management system and is of great significance for improving the operating environment of network management system and increasing the security and stability of operation.

3.3. Data mining technology

The data mining technology is also one of the effective applications of AI in computer technology. In the process of use, it mainly analyzes the functions of various data, such as host session and network connection, etc. on the basis of auditing procedure, describes them systematically, scientifically and thoroughly and achieves the extraction of various effective data. From the state of art of this technology, it can identify some software and viruses with the ability to invade in a more accurate way, learn and deal with the daily activities and rules of computer network. All kinds of big data can be grasped and memorized quickly and comprehensively. If the

computer encounters network anomalies, data loss and other problems in use, these data can be replenished instantly, so as to cover losses and guarantee the effectiveness of the computer monitoring and identification.

3.4. Intrusion detection technology

By nature, the intrusion detection technology can be categorized as one of the many types of firewall technology. However, compared with firewall technology, the intrusion detection technology is more targeted. In practical application, it is more frequently used in the collection, analysis and processing of information. Generally, the application of this technology may need to go through some procedures, that is, to analyze, screen and process the techniques collected and captured by computer and then edit the final results into a report automatically, and submit it to the users, so that the users can keep track of the basic usage of computer from time to time, which is very crucial for the security monitoring of computer and the diminishment of virus invasion [3]. Meanwhile, even though the computer is invaded by viruses, the intrusion detection technology can detect in the first instance and take effective measures to intercept the viruses, in case the computer is invaded on a greater scale. Although there are differences between intrusion detection technology and firewall technology, they have both inbuilt AI technology, which makes information collection and data interception faster, increases the response speed and creates a safer network environment.

4. Anti-spam system

In people's everyday life, e-mail has become an important tool for communication and connection. Especially within an enterprise, e-mail is often used to transmit information. Since the network is an open space, users are very vulnerable to advertising, frauds and Trojans, etc. when using e-mail. If one clicks them inadvertently, his/her personal information may be disclosed and even result in substantial economic losses, for example, phishing websites. The emergence of anti-spam system can handle these circumstances effectively, and AI can be used to analyze the contents of these e-mails and intercept spam. At present, AI itself can generate an anti-spam system, and users can intercept and process spam automatically, simply by setting up an inherent defense mechanism inside the mailbox, so as to create favorable conditions for users to better manage their e-mails, and protect users from suffering economic and property losses. It is noteworthy that with the development of times, spam, Trojans and phishing websites, etc. often take a variety of forms, so it is necessary to update the computer system in a timely manner, to guarantee that the AI spam system fully exerts its functions [4].

5. The Concrete Implementation of AI in Computer Technology

Although at present, the fusion degree between AI and artificial technology continues to deepen, there are still some problems during the actual development of computer network, and effective measures have to be taken to incorporate AI in computer technology, thereby giving full rein to the positive role of AI technology.

5.1. To strengthen the management of network security

Under the historical background of the rapid development of Internet, how to better realize the management of network security has also becomes a priority that technicians attach great importance to. Meanwhile, it can also sufficiently guarantee the better fusion between AI and computer technology. Therefore, in future development, we should strengthen the management of network security, detect and repair safety loopholes, and improve the quality and efficiency of network security management. On the other hand, relevant technicians must also detect the security of computer network at regular intervals and adopt effective methods to achieve the effective management of computer networks and lay a foundation for the effective use of AI.

5.2. To attach importance to the management of network system

In the previous management of computer network system, the system is mainly managed artificially. This is a passive management mode. The actual operation is dominated by the manual collection of computer information and highly prone to collecting wrong information and interfering with system operation. The inclusion of AI technology can lower the possibility of information error and all kinds of loopholes, and give the best management decision, according to the collection and analysis of data information. It is very crucial to further refine the computer network technology. In view of this, technicians need to advance the technology in the future, better apply AI system to network system management, perfect this system, makes the management of network system more sophisticated and offer convenience for the deeper fusion between AI and computer technology in the future.

5.3. To expand the functions of computer network technology

AI technology is a technological breakthrough made in the 21st century. When it is applied to computer technology, the functions of computer technology can be further expanded. This kind of expansion is often reflected in the protection of passwords. The passwords of customers can be effectively protected, and the basic legitimate rights and interests of users can be safeguarded [5]. So far, the fusion between AI and computer technology has given birth to a series of techniques, such as face recognition and voice recognition. The emergence of such techniques can protect passwords to the maximum extent and improve security for the use of computer network. Although subject to technical factors, these technologies are not widely used in computer technology, and the popularization degree is not high, with the rapid development of science and technology today, this technology will be effectively exploited in the future, applied in computer network technology in a more sophisticated state and promote the further development of computer network.

6. Conclusion

To sum up, in recent years, AI technology has been increasingly popular and brought great convenience to people's everyday life, and its fusion with computer technology not only gives full play to the advantages of AI proper, but also promotes the future development of computer technology, so as to build a healthier, greener and safer computer network environment. From the status quo of AI and computer technology, the application of AI is mainly embodied in intelligent firewall technology, artificial immune technology, data mining technology, intrusion detection technology and anti-spam system, etc., which make computer technology more advanced and conform to people's demands. Therefore, in future development, we can promote the fusion between the two by strengthening the management of network security, attaching importance to the management of network system and expanding the functions of computer networking technology, etc., so as to build a more intelligent operating environment for computers.

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References

[1] Hao Dengshan, An analysis of the application of artificial intelligence in computer network technology. China New Telecommunications, 2016, 18 (1): pp. 87-89.

[2] An Xiaoguang, Exploring the application of artificial intelligence in computer network technology. Chinese and Foreign Entrepreneurs, 2016 (23).

[3] Zhang Chunbai, Artificial intelligence and its application in computer network technology. China New Telecommunications, 2017 (12).

[4] Zhao Yang, Analyzing the application of artificial intelligence in computer network technology. Modern Economic Information, 2016 (4).

[5] Li Tianyi. The analysis of the application of artificial intelligence in computer network technology. Digital Communication World, 2018 (2).