Analysis on the Influence of Artificial Intelligence in Computer Network Technology

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Abstract: As a hot topic in the current society, artificial intelligence is increasingly showing a pivotal position. Today, with the continuous improvement of science and technology, artificial intelligence has become an indispensable technology. The development of artificial intelligence has promoted the rise of new industries. In the context of the widespread use of electronic computers by the public, computer network technology continues to advance, and the application of artificial intelligence in computer network technology has created a better experience for people. To this end, this paper mainly analyzes the influence of artificial intelligence in computer network technology and some application aspects.

1. Overview of Artificial intelligence

1.1. The meaning and characteristics of artificial intelligence

In computer networks, artificial intelligence is a critical component. It penetrates into many development areas, such as dealing with natural language, recognizing pictures, robots, recognizing languages, etc. It is also a comprehensive high-tech that unifies theory, methods, development, research, technology, and application, and can engage in some work that human intelligence can do. And, similar to the genius brain is a remarkable feature of artificial intelligence. In short, if you want to complete a task with a high degree of difficulty, the task that requires the human brain to do well and finish is only required by artificial intelligence. Even artificial intelligence is faster than the human brain. Faster and more accurate calculations. Of course, artificial intelligence requires human operation and control.

1.2. Problems in the development of artificial intelligence

Artificial intelligence has great potential for development. However, for today, it faces many problems. First, the environment in which artificial intelligence is running faces a lot of uncertain security issues, such as storing information about customers through artificial intelligence, which is more likely to lead to the formation of leaks. Second, the artificial intelligence network data is more dispersed, often not uniform, which is not conducive to the improvement of science and technology, and it is difficult to meet the needs of the society to process data. Third, due to management loopholes, criminals often use artificial intelligence to engage in some illegal and illegal work.

2. The influence of artificial intelligence in computer network technology

Artificial intelligence greatly facilitates people's lives and work, so it can be applied universally, which is closely related to its advantages. Among them, the influence of artificial intelligence on the formation of computer network technology is as follows.

2.1. Improved information processing capabilities

In the era of big data, a single ability to process data has become difficult to adapt to the requirements of the current information society. The lack of sufficient information processing ability is the fundamental factor affecting the improvement of science and technology. And artificial intelligence has a very strong information processing ability to effectively deal with this problem. Artificial intelligence belongs to the highest level of pursuit of intelligent machines, and the mutual

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penetration and unification of brain and human machines. The level of information processing technology has been greatly improved both in terms of processing accuracy and processing speed. The application of artificial intelligence logic operations in computer network technology can shield some uncertain and massively repeated information in the network, and can process big data quickly and accurately. Moreover, artificial intelligence can also realize the regular improvement and update of the information base, and simplify the way of querying information, thereby greatly improving the information processing capability.

2.2. Good fuzzy information processing capability

In general, artificial intelligence applied in reasoning belongs to the category of fuzzy logic and lacks accurate data models. There are a lot of information in the computer network in a fuzzy state. This series of information lacks accuracy and is difficult to start. Artificial intelligence has a very strong ability to process fuzzy information. It can manage fuzzy information hierarchically. The information data after processing is divided into several levels, which makes the speed of processing data increase, which can promote the application of artificial intelligence more widely and universally in computer network technology.

2.3. Great learning ability

Artificial intelligence can organize, learn, and select key information on the Internet to enhance cognitive ability. Based on the analysis and inference of various levels of information, we can obtain valuable information to more accurately analyze problems and provide intelligent services to computer networks.

2.4. Strengthened collaborative ability

The computer network is getting more and more advanced, and the network scale is continuously increasing. The network architecture is also increasingly complicated. A single network environment is difficult to adapt to the needs of long-term development. Artificial intelligence has the ability of nonlinear coordination, which can coordinate and manage the hierarchical relationship of the network to achieve maximum efficiency.

2.5. More efficient and resource saving

Artificial intelligence can perform tasks with high quality and efficiency by controlling algorithms and optimal solutions, and can realize scientific control and allocation of routing and traffic in the management computer network, thereby saving resources and ensuring efficient management of the network.

3. Application of artificial intelligence in computer network technology

3.1. Artificial intelligence network security applications

One problem that network users today pays great attention to is network security. Especially for some server facilities, there is an urgent need to increase the overall security factor of the network system with a security protection system. Because artificial intelligence technology can collect data extensively and integrate and analyze data, its role in network security protection is very important. The specific application aspects thereof are as follows.

3.1.1. Application of artificial intelligence in firewall settings

For the protection of network security, the setting of the firewall is the key.At present, many firewalls improve performance by self-regular update, or apply vulnerability fixes and patch fixes in a part of running firewalls. In a sense, such a protection method is difficult to achieve the desired protection effect. The application of artificial intelligence in computer network technology is as follows. First, it can identify the types of high-probability network attacks based on the collection and analysis of network information, and then use this as a precondition to record a series of IP addresses of the network to lay the foundation for the next search for attack sources and processing

problems. Second, for the already disclosed network attack address, the system can autonomously block its access to the protected network and prevent it from attacking the entire system. In the future development, the application of artificial intelligence technology will automatically generate protection patches for the corresponding network attacks, thereby greatly improving the protection effect. Despite the technical implementation of the process, this is more difficult. However, looking at today's smart technologies and their principles, artificial intelligence systems already have strong autonomous logic capabilities, but only need further argumentation.

3.1.2. Application of artificial intelligence in hardware protection

For hardware protection, the application of artificial intelligence is to clearly understand the quality of the work of the hardware facilities based on the corresponding work information of the hardware facilities. In the case where the set standard value does not match the hardware facility work data, it can be judged that the hardware facility is facing a problem. Artificial neural network technology is the most widely used artificial intelligence technology. This technology not only has the need of multiple input and multiple output, but also can analyze the working state of a series of hardware, and combines the control center to send relevant control commands. Therefore, it is possible to apply a control technique in which a sensor device is designed in an important facility of network technology to well protect the hardware facility. In the future, we will be able to construct protection and supervision systems for tiny electronic devices (resistors, boards, etc.).In the case of a work failure in such a facility, it can promptly alert and pre-process the fault problem, thereby greatly improving the overall work quality of the system.

3.1.3. Artificial intelligence in other protection applications

Other protection aspects focus on software protection. There are two kinds of software today, one is malware, the background vulnerabilities and viruses are often covered in such software, and the unscrupulous people often use this design method to obtain a series of data of network users. In the computer network technology, the application of artificial intelligence can record and integrate some key vulnerability codes. It is clear whether it is facing security problems in the software download, and reporting security problems, which is convenient for other artificial intelligence protection systems. The other is the phenomenon that normal software functions are restricted. For attacks against malware, artificial intelligence can analyze its IP address when it is protected, and then submit it to the domestic network security protection department and ask it to arrest the person concerned. Some lawless people today often use IP address mapping technology to conduct network attacks to disrupt the line of sight of a series of protection systems. We can design a cloud computing system when applying artificial intelligence technology to accurately and quickly analyze the attacker's IP address.

3.2. Application of artificial intelligence in network regulation

For the development of network technology, 5G communication technology will be built and applied. The advantage of 5G technology is that it can greatly improve communication efficiency, and highly integrate Internet communication, Internet of Things signals, TV signals, etc., to ensure the improvement of the overall working state of the system. A leading application trend of 5G technology is to realize the deployment of Internet resource allocation based on the analysis of the working state of the Internet. For example, we can analyze the user's needs through 5G under the premise of recording and analyzing the user's computer hardware interface under the premise that the user works in the network and the artificial intelligence technology, and then allocate network resources based on this. In the future development, the continuous improvement of the level of intelligence is the development direction and trend of the technology. This requires that it has the corresponding text interpretation ability, which can effectively analyze the user's Internet application requirements to improve the network control accuracy.

4. Conclusion

All in all, artificial intelligence has played a pivotal role in people's lives and has made tremendous contributions to humanity. With the help of artificial intelligence, the computer network avoids the leakage of data information on the computer, and the other party also has great help in the management of the computer network. In the future, we will also strengthen the application of artificial intelligence in computer networks, and constantly improve artificial intelligence technology so that it can better serve humanity.

References

[1] Cha Huangying. Based on the application of artificial intelligence in computer network technology in the era of big data [J]. Electronic test. 2018 (19)

[2] Gao Ta, Research on artificial intelligence application in the era of big data in computer network technology [J]. Tian Yuxin. Management and Technology of SMEs (early issue). 2018 (06)

[3] He Candong. On the application of artificial intelligence in computer network technology based on the era of big data [J]. Information and Computer (Theoretical Edition).2016(24)