

Application of Artificial Intelligence in Computer Network Technology

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Abstract: With the advent of the era of big data, data information is gradually increasing, which puts forward higher requirements for the processing and mining ability of data information. Therefore, in the context of big data, the application of artificial intelligence to computer network technology can effectively improve the technical level of computer network, so as to effectively ensure the security of data and information. As a new technology and science, artificial intelligence is widely used in robots, expert systems, image recognition and other fields, and has certain intelligence and convenience. As the most commonly used data processing tool of the times, it can further improve the efficiency of data processing. On this basis, this paper expounds the advantages of artificial intelligence in computer network technology, and puts forward the specific application strategy of artificial intelligence in computer network technology, so as to improve the performance of computer network system.

1. Introduction

In modern society, people's daily life, production and learning are increasingly inseparable from computer network technology. However, when people use computer technology to classify, transmit and store information, it is easy to face a series of problems, such as information theft, poor information processing effect, poor information quality, system collapse, etc., which is not conducive to give full play to the role of computer network technology. The combination of artificial intelligence and computer network technology is conducive to improve the stability of computer system and realize the efficiency and security of data processing. In the era of big data, the scale of data processed by computer is becoming larger and larger, and the quantity and type of data are becoming richer and richer. Traditional computer network technology has been difficult to meet people's requirements for high-intensity, high-efficiency and high-quality data processing. Therefore, it is necessary to apply artificial intelligence to computer network technology to make computer network technology better serve human society.

2. Concept of Artificial Intelligence

The so-called "artificial intelligence" refers to the theories, methods and technologies used to simulate, expand and expand human intelligence (As shown in Figure 1). As a branch of computer science, it faces certain challenges. It can simulate the thinking process and intelligent behavior of human learning, reasoning, thinking and planning, and bring convenience to people's daily life. Therefore, it has gradually attracted more and more attention.

Artificial intelligence is not human intelligence. The development of artificial intelligence is similar to that of robots, mainly to complete some tasks that are difficult for humans to complete. The biggest advantage of artificial intelligence is that it can complete some dangerous or difficult tasks, but now artificial intelligence products can be seen everywhere in people's daily life. Nowadays, smart phones and various smart appliances used by people are practical applications of artificial intelligence. At present, with the rapid development of computer network, artificial intelligence has also been affected. The two promote and complement each other.



Figure 1 What is artificial intelligence?

3. Advantages of Artificial Intelligence in Computer Network Technology

With the advent of the era of big data, computer network technology is constantly updated, and the use of artificial intelligence is gradually increasing, which effectively improves the efficiency of data processing and ensures the stability of computer network system(2020,Li Zhiwei). Generally speaking, the advantages of applying artificial intelligence to computer network technology are mainly reflected in the following aspects.

3.1. Increasing the ability of data collection and network cooperation

In today's information age, data and information are diversified, the types are expanded, and the content covers many fields. There are many fuzzy information data, which brings pressure to the traditional computer data processing system. The application of artificial intelligence just solves this situation. The hierarchical management mode is used to process the fuzzy information efficiently, and then classify the processed information data, which effectively improves the information level of data processing and promotes the rapid development of computer network technology. The data in the computer network is constantly changing. When the computer is working, it will encounter a lot of fuzzy information and unknown information. At this time, manual processing cannot be accurate and timely. Artificial intelligence technology can infer these data through fuzzy logic module, so as to obtain relatively accurate information description, so as to improve the speed of computer network processing information. Artificial intelligence can also use collaborative distributed thinking to modularize the computer network structure and information processing management, so as to effectively improve the quality of network work.

3.2. Cutting the cost

As we all know, artificial intelligence has the characteristics of convenience, fast data processing speed and high precision. In this case, the application of artificial intelligence to the computer network system can effectively reduce the waste of resources and reasonably control the data information, so as to improve the operation efficiency of the computer system, reduce the operation cost of the computer system and obtain more economic benefits.

3.3. Promoting the intelligent development of computer network system

As a new field, artificial intelligence can be applied to computer network system to deeply mine data information and integrate valuable data information, so that computer network system has higher information recognition ability, data comprehensive analysis ability and data acquisition ability, so as to ensure the accuracy of data information processing and promote the intelligent development of computer system(As shown in Figure 2).

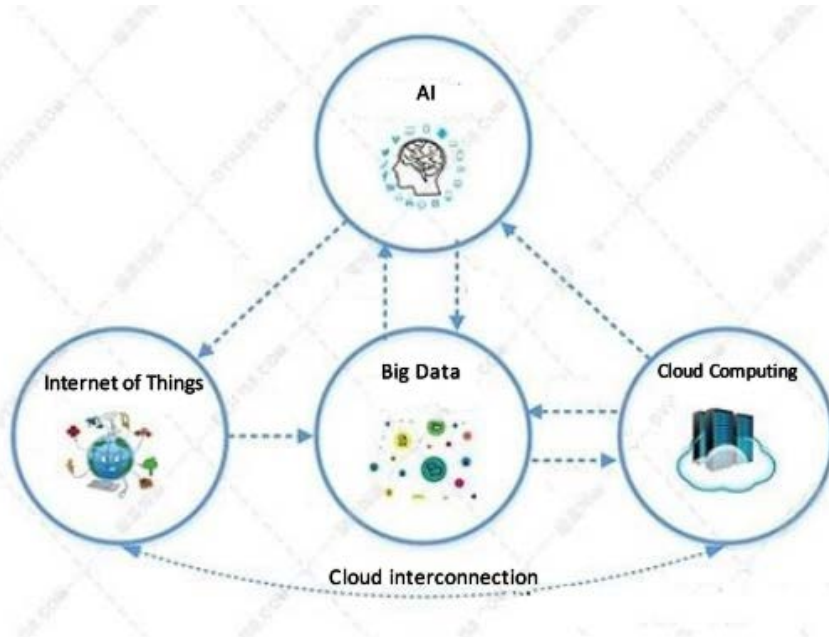


Figure 2 Intelligent development of computer network system

4. Basic Method Analysis of Artificial Intelligence Application in Computer Network Technology

4.1. Automatic planning

Compared with traditional technical means, the essence of intelligent planning is to reduce complex problems and the difficulty of solving problems, so as to quickly find a breakthrough to solve problems. At present, the application of automatic planning technology in advanced solution system has achieved good results. Each goal in the plan is relatively specific. You can start from a specific problem state, complete action reasoning, plan the process of each problem to be solved, and then solve these problems in turn. This method can improve the efficiency of problem solving, but it is highly dependent on artificial intelligence path selection technology. Therefore, we should strengthen the research of path selection technology and provide efficient, standardized and orderly path selection technology in order to make effective use of automatic planning technology.

4.2. Heuristic search

In the past, computer network technology generally adopted the method of blind search, that is, after sending the search task, use the existing network transmission channel to transmit the signal to other network transmission channels, and test all schemes to find out the scheme that can achieve the goal of the search task(2020,Fan Jinfeng). The application of artificial intelligence in computer network technology can replace blind search by heuristic search. Heuristic search is a search technology based on algorithm design and heuristic strategy. It mainly makes full use of the heuristic information and experience accumulated in the past, eliminates the unlikely path and selects the more likely path for search, which effectively improves the search efficiency, reduces the resource consumption generated by search and further improves the accuracy of search.

4.3. Knowledge expression

Based on computer data processing technology and with the help of knowledge expression technology, we can effectively deal with the problem of knowledge expression and improve work efficiency. In terms of knowledge expression, machines use 0 and 1 as the symbols of knowledge expression, and human beings use natural language as the symbols of knowledge expression. Knowledge expression technology can connect two kinds of knowledge expression symbols, so that the computer can simulate the state of human brain and have similar storage and memory as human

brain, so as to find the required knowledge in the shortest time, analyze and apply the knowledge. After obtaining the results, execute the knowledge expression command to effectively solve the related problems of knowledge expression.

5. Problems of Artificial Intelligence in Computer Network Application

5.1. Security threats

At present, computer network technology has many potential security risks and faces more and more threats. In the long-term development process, there are many defects and loopholes in computer network technology. In addition, the profit-making behavior of various criminals and the malicious theft of organizational and personal business information have exacerbated the unfair competition among enterprises and affected the development of enterprises.

5.2. Data collection difficulties

With the development of network technology, the types and quantity of information in the database are increasing, which makes the difficulty of computer management and control increasing, and affects the development of computer network technology.

6. Effective Application of Artificial Intelligence in Computer Network Technology

With the rapid development of computer industry, the probability of network security problems is increasing, which makes people pay more and more attention to computer network security problems. The application of artificial intelligence can improve the security of computer network technology, reduce the failure probability of computer network system, distinguish information and data, and fully improve the efficiency of computer network management. It can be seen that the application of artificial intelligence in computer network system is an inevitable trend.

6.1. Artificial intelligence applied to computer network security management technology

As we all know, in the operation of computer network system, we often encounter problems such as hacker intrusion, resulting in user information leakage and potential security risks and economic losses. In the face of this situation, staff need to apply artificial intelligence in computer network security management technology, give full play to the advantages of artificial intelligence, establish database according to computer reasoning mechanism, improve computer coding, ensure that they can resist hacker intrusion, ensure the security of data and information, and improve the security of computer network system at the same time. Employees can also identify the input mode of variation and noise through artificial intelligence to ensure the stable cooperation between artificial intelligence and computer system, so as to improve the work efficiency of artificial intelligence and promote the sustainable development of the industry.

6.2. Artificial intelligence is applied to computer network management system

The development of artificial intelligence has brought many conveniences to human work. Generally speaking, artificial intelligence refers to the combination of telecommunication technology and computer technology. Applying it to computer network management system can effectively combine knowledge base with problem-solving technology and improve the efficiency of system management. At the same time, the application of artificial intelligence can make the network management and system evaluation work no longer constrained, improve the professionalism of the work and reduce the difficulty of computer network system management.

6.3. Artificial intelligence applied to computer data mining system

In the current information age, the amount of data information is large and the content of information is complex. In this case, the work of the computer data mining system is facing a certain pressure, and employees need to apply artificial intelligence to the computer data mining system to achieve the following two points: on the one hand, employees need to use relevant

equipment to deeply mine data information according to the standardized data mining process, Thus, the security of computer network system can be improved and the accuracy of data information can be improved. On the other hand, in daily life, employees need to learn the rules of computer intrusion, master the system mode of computer intrusion, and then record the data to ensure that each intrusion data information will not be omitted, so as to facilitate the next step to identify the behavior of external computer intrusion system and effectively improve the operation safety of data mining system.

7. Conclusion

In short, in the context of rapid social and economic development, due to the increase of data and information, the computer system is prone to problems such as low efficiency and network paralysis in the operation stage, which can not meet the needs of normal use. Facing this situation, employees need to reasonably apply artificial intelligence in the computer network system to ensure that the data information can be analyzed and sorted in time, and solve some loopholes in the computer system in time, so that the computer system can be updated in time, so as to improve the security of the computer system and promote the faster development of computer network technology.

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