



Research on the application and Optimization Countermeasures of artificial intelligence in computer network technology under the environment of "Internet +" and big data

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Abstract—In the context of "Internet +" and big data, information technology has been rapidly improved, and artificial intelligence technology has been produced. At present, artificial intelligence technology has been widely used, significantly improving work efficiency and increasing social and economic benefits. The application of artificial intelligence to computer network technology is of great significance, pointing out the development direction of science and technology in the era of "Internet +" and big data. This paper will mainly explore the practical application of artificial intelligence in computer network technology and its optimization countermeasures..

Index Terms—"Internet +", big data, Computer network technology, artificial intelligence, network security.

I. INTRODUCTION

"Internet +" and big data technology have emerged with the rapid development of computer network technology. In the era of "Internet +" and big data technology, the application level of big data and artificial intelligence technology has greatly improved. All industries should clarify the development trend of computer network technology, effectively integrate big data, computer, artificial intelligence and other technologies, and actively explore and tap the practical application of advanced science and technology, Provide guidance and support for technology research and development to meet the needs of rapid development of computer network technology.

The R&D and practical application of science and technology promote the development of society towards intelligence. The support of big data, cloud computing and other technologies has promoted the realization of AI technology. The application of artificial intelligence to adjust and optimize the production plan effectively reduces the input of manpower and material resources, saves costs and increases the economic benefits of the enterprise. In the "Internet +" environment, we should deeply explore the

application of artificial intelligence in computer network technology, innovate the application mode of artificial intelligence, and promote the more sustainable, rapid and healthy development of China's economy [1-10].

This paper first describes AI and its key technologies, then analyzes the advantages and development status of AI, and finally explores the practical application of AI in computer network technology and specific optimization strategies.

II. OVERVIEW, CHARACTERISTICS AND KEY TECHNOLOGIES OF ARTIFICIAL INTELLIGENCE

Artificial Intelligence (AI for short) is a technical discipline that broadens the theory and research methods of human intelligence. Its focus is on scientific research and development to improve the performance of machinery, computers and other equipment. AI covers a wide range of areas, including physics, biology and computer science and technology. Artificial intelligence studies human thinking through simulation, which has greatly changed the traditional production mode and promoted the development and progress of society [4].

Artificial intelligence technology organically integrates computer science, physiology, linguistics, etc., making machines have the function of artificial intelligence and can handle complex, cutting-edge and dangerous work, which not only improves work efficiency, but also ensures the life safety of staff [5]. AI technology covers research methods, intelligent simulation, security issues and many other aspects.

In the traditional sense, complicated scientific projects are basically completed by human brain. The generation and application of artificial intelligence has saved a lot of human, material and financial resources for mankind. Artificial intelligence helps China enter a new stage of development. With the development of science and



technology and the big data of data sources, human society has entered the big data era with the characteristics of diversification and diversity [7].

In the context of big data and "Internet +", artificial intelligence technology is characterized by comprehensiveness, novelty and coordination. It can also realize transmission and sharing and intelligently handle uncertain information. [11] emphasized that Security is an important issue in current and next-generation networks. Blockchain will be an appropriate technology for securely sharing information in next-generation networks. Digital images are the prime medium attacked by cyber attackers. In this paper, a blockchain based security framework is proposed for sharing digital images in a multi user environment. The proposed framework uses reversible data hiding and encryption as component techniques. [12] proposed a secure hash message authentication code. A secure hash message authentication code to avoid certificate revocation list checking is proposed for vehicular ad hoc networks (VANETs). The group signature scheme is widely used in VANETs for secure communication, the existing systems based on group signature scheme provides verification delay in certificate revocation list checking. In order to overcome this delay this paper uses a Hash message authentication code (HMAC).

III. ADVANTAGES OF ARTIFICIAL INTELLIGENCE DEVELOPMENT IN COMPUTER NETWORK TECHNOLOGY

A. Intelligently and efficiently process computer data

At present, all walks of life are developing rapidly in the age of big data, and the rich data formed include valuable data and valueless data. Timely analysis and processing of these massive value data information can provide strong support for the stable operation and rapid development of the industry [7-8]. With the help of artificial intelligence technology to intelligently identify, analyze, extract and share valuable data, it can not only effectively improve the speed and efficiency of data information processing, but also effectively ensure the safety and reliability of data.

B. Have strong cooperation ability, reasoning ability and learning ability

Artificial intelligence technology has strong cooperation ability, reasoning ability and learning ability. It can integrate resources and information and provide them to users for sharing and transmission to improve work efficiency and efficiency. The application of artificial intelligence technology in network management is convenient for efficient and accurate processing, memory and storage of various information, and the construction of information resource library, so as to

further form higher level information.

C. Precise processing of fuzzy data

The traditional information processing method is to create a specific system model for the corresponding modules, which undoubtedly increases the cost of processing data information. It is difficult to ensure the stability of information processing, and lacks the ability to accurately analyze and process fuzzy data [8]. The use of artificial intelligence technology can analyze a large amount of data information, and can directly process fuzzy data without creating a system model, effectively improving the speed of data and information processing.

D. Scientifically control the cost of computer network technology and effectively reduce the operating cost

Traditional methods of information and data processing often require high input costs, and the efficiency and quality of information processing are relatively weak. Artificial intelligence has strong information processing capabilities and strong security, which can effectively reduce the input costs when processing data information, avoid data information loss, and prevent potential security risks.

IV. APPLICATION OF ARTIFICIAL INTELLIGENCE IN COMPUTER NETWORK TECHNOLOGY

Applying artificial intelligence to computer network technology is an inevitable trend and requirement in the era of "Internet +" and big data. The problems in the practical application of computer network technology are diversified. For example, the network information security problem is particularly serious, the information security risk is increasing, and the threat of network attacks and computer viruses always exists. In the context of "Internet +" and big data, people can push and receive information through smartphones, tablets and computers, but a large number of junk information has brought great trouble to users and brought crisis to people's lives and work. The practical application of artificial intelligence in computer network technology is mainly reflected in the following aspects.

A. Application of artificial intelligence in network management

At present, information technology has been popularized, and the scope of network technology is gradually expanding. When dealing with a large amount of data information involved in the operation of computer network, it is inseparable from the support of network management [9]. Artificial intelligence uses the simulated control mode to manage the computer network technology,



and adds human thinking to it. It can process data efficiently and deal with the variability of data.

B. Application of artificial intelligence in network security

Network security management is the most critical management work in the process of information technology exploration and improvement. Technicians can effectively plan and implement network security management by using big data and artificial intelligence technology. The application of big data and artificial intelligence technology can effectively improve the protection ability and provide guarantee for network security.

C. Application of AI agent technology

AI agent technology uses software entities to build databases and knowledge domain databases for computer network systems. AI agent technology has the characteristics of agent. It can process information and complete corresponding tasks at the same time. Artificial intelligence agent technology has automatic data search function, which can provide convenient humanized and intelligent services for computer network users, quickly identify, analyze and process value data information, greatly save users' time, and improve work quality and efficiency. Nowadays, sending and receiving email, online shopping, etc. can use AI agent technology to provide very convenient services.

C. Data acquisition and analysis

In the practical application of computer network technology, large amounts of data are often generated. In the era of "Internet +" and big data, information is characterized by diversity and huge amount of data. It is more stressful to collect data simply by using traditional technology, but using artificial intelligence technology can collect, analyze, use and share more data scientifically and reasonably, greatly improving the efficiency of data analysis.

D. Application of artificial intelligence in computer network system management and evaluation

In order to meet the diversified functions and service requirements in the era of "Internet +" and big data, it is necessary to integrate computer network technology and artificial intelligence technology to ensure the security of network management. Nowadays, the computer network is transient, dynamic and complex. Artificial intelligence technology can simplify complex computer network management and provide guarantee and convenience for comprehensive management [1,3,5,7,9]. Artificial intelligence technology integrated into computer network

management and system evaluation can efficiently solve complex work.

V. OPTIMIZATION MEASURES OF ARTIFICIAL INTELLIGENCE IN COMPUTER NETWORK TECHNOLOGY

A. Improve the intelligence level of artificial intelligence

Under the current situation, technicians should deeply study AI technology, improve the level of intelligence, and give full play to the leading role of AI in the computer network. For example, according to the characteristics of computer network technology, the artificial intelligence system is continuously optimized and innovated.

B. Participation of government and enterprises in technological innovation

As we all know, enterprises and government departments play a dominant role in AI technology innovation. Government departments should provide policy support for the R&D and practical application of AI technology. The innovation process of AI technology requires a large number of excellent talents and financial support. The government departments should play their due leading role, support and encourage enterprises to innovate continuously, increase capital investment, and promote the development of AI technology to a higher level and direction.

C. Strengthen network security and maintain artificial intelligence application environment

Applying AI to computer network technology requires constantly strengthening the security and maintenance of the network, creating a good application environment for AI technology, preventing information leakage, ensuring that every department can use it with confidence, and achieving the expected application effect of AI technology [2].

D. Measures to strengthen the application of artificial intelligence

The scientific and reasonable application of artificial intelligence technology to computer network technology can improve the application effect of network technology. Therefore, attention should be paid to strengthening the practical application and promotion of neural network technology, data mining technology, network system management evaluation technology, artificial immune technology and expert knowledge base technology.

VI. CONCLUSION

The organic integration of artificial intelligence and computer network technology will help to give full play to modern technology, gradually improve the security of computer network technology application, save operation and maintenance costs to a large extent, and lay a solid



foundation for the rapid development and upgrading of computer network technology. It is the responsibility of workers in the new era to innovate and optimize artificial intelligence technology and improve the overall level of computer network technology, which requires the joint efforts of relevant departments and scientific and technological personnel.

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