Application of Artificial Intelligence in Computer Network Technology under the Background of Big Data

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Abstract: The progress of science and technology has changed the technology of computer network, which provides convenience for people's life and work. And related field staff are committed to more advanced technology research, to promote the trend of artificial intelligence, to help people save more time and energy. Under such conditions, applying artificial intelligence to computer network technology through scientific schemes can strengthen the application of big data in all aspects and data mining, ensure the stable operation of computers and improve processing capacity. This article will elaborate the development of artificial intelligence in the era of big data, analyze the advantages of artificial intelligence, and discuss the application of artificial intelligence in computer network technology in the era of big data.

1. Introduction

In the era of big data, the formation of big data from different data sources further determines the diversity of data types and the diversity of data formats and sources. In the era of big data, the data scale and capacity are continuously increasing. Therefore, it is necessary to improve the information processing ability to better meet the needs of people's life and work. In the era of big data, data transmission is fast and efficient, which will not affect the data transmission and processing process and system stability. With the continuous development and update of computer technology, under the trend of macro information, computer network has become an effective tool for people's life and work, and has gradually penetrated into all aspects of human production and life, brought many conveniences to people, and enriched people's life quality. As an important branch of computer network technology, artificial intelligence has a profound impact on people's production and life. It has led the development of computer network technology into a new field and is an important sign of opening a new era.

2. Correlation Analysis of Artificial Intelligence

Artificial intelligence refers to the computer's autonomous learning and control in the process of simulation, expansion and extension, and to achieve the goal of human-like transformation of the computer operating system. As a theoretical method and technical means for research and development and for simulating and expanding human intelligence, the emergence of artificial intelligence further enriches computer science systems and is an important foundation for human society to move towards higher development civilization. As far as computer network technology is concerned, artificial intelligence and computer network technology are complementary to each other and play an important role in promoting development, thus enriching and perfecting their functional load. Specifically, the realization of artificial intelligence technology requires not only the support of computer software technology and electronic information technology, but also the common support of sensor technology and other multidisciplinary technologies. It is precisely based on the intelligent and humanized characteristics of artificial intelligence that it can complete the fuzzy processing of some uncertain problems, and then guide the computer to complete a series of similar human operations. The scope of its functions is increasingly expanded and the effectiveness of network management is effectively improved.

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2.1 Advantages of Artificial Intelligence

2.1.1 Good Information Processing Ability

The application of artificial intelligence computer network system management to computers has achieved remarkable results. By using appropriate methods, the efficiency of network management can be effectively improved in actual operations. While realizing the reasonable optimization of network resources, it can also discover the most likely problems in the operation of the network in a timely manner. On the basis of effectively mastering the overall network resources, it can effectively monitor the overall operation of the network system, ensuring the reasonable operation of the system and the safety of the system. Artificial intelligence is applied to computer network technology. It uses network management to determine information. It can not only enhance the control ability of network information, but also improve the processing ability of network information, thus realizing the satisfaction of artificial intelligence to different users' needs.

2.1.2 Strong Cooperation Ability

With the continuous update and development of science and technology, the wide application of computer network technology has been accelerated, and the scale of development is also expanding day by day, and the network structure has been enriched day by day. Single network management artificial intelligence technology is difficult to realize the current development of artificial intelligence. In order to effectively complete certain network management work, artificial intelligence technology is used to manage the network in a hierarchical and scientific way. It is not only necessary to monitor the details of each level, but also to make the three levels cooperate with each other to complete the specific operation process. While scientifically coordinating the relationship between each level, it also promotes the coordination of network management.

2.1.3 Good Reasoning Ability

With the in-depth application of computer network technology, in order to realize the enhancement of information management in the information base, Internet technology can be applied to complete information management. Whether the network management can proceed smoothly depends on the monitoring of the work content and the rationalization of management methods. The effective integration of artificial intelligence into the network information system can not only accurately obtain various information contents, but also effectively improve the information management capability.

2.1.4 Effectively Control Resource Consumption

The analysis of network information resources cannot be separated from the application of artificial intelligence algorithm. The reasonable application of artificial intelligence algorithm can not only accelerate the calculation process, but also obtain the calculation results in a short time. In order to effectively control the consumption of data resources, it is necessary to effectively control the data flow between computer network and artificial intelligence during the application of artificial intelligence technology.

3. Development of Computer Network Technology Based on Artificial Intelligence

The advantages of artificial intelligence in many aspects, its application and implantation in the development of computer network technology have created huge functional benefits and made its functional load more and more sound. Including security management, information inquiry, environmental support, etc. The development trend of this project is irresistible.

3.1 Intelligent Firewall

The realization of network security management cannot be achieved without the support of various technologies. Compared with the traditional firewall, intelligent firewall is an innovative product, which is based on the actual needs of users and combined with the Internet environment to

automatically adapt to the adjustment of firewall security level, so as to achieve the purpose of coping with network security problems at any time. When there is a certain threat to network security, the intelligent firewall will intercept the threat and restrict its access while applying a certain method to effectively isolate harmful information. The effective application of intelligent firewall can effectively inhibit the spread and invasion of virus.

3.2 Agency Technology

Artificial intelligence Agent technology, also known as agent technology, is an autonomous, social, reflective and dynamic computer network hardware system with balanced and super performance. The computer network system based on artificial intelligence agent technology can realize the perception of the environment and make timely response to relevant events. Finally, it completes relevant instruction operation by itself to provide users with accurate and fast data information service. And can generate a database, which in turn lays a solid foundation for highly integrated information. Especially with the development of Internet economy, the development of human society under the background of the information age has entered a high-speed explosive period. Various kinds of data and information emerge one after another, causing great difficulties for users to choose. On the other hand, the construction of computer network system based on artificial intelligence agent technology can screen useful information according to the user's needs, which greatly facilitates the user's personalized service experience, improves the utilization efficiency of all kinds of data information, and realizes the effective saving of time and cost. This is of great value in the fast-paced modern life. In addition, the application of this technology in the field of e-commerce also provides the registration function of relevant information points for information publishers or searchers separately, thus realizing the dynamic balance of supply and demand information. To a large extent, this has met the increasingly intense personalized consumer psychological needs of the public and provided them with a good technical support environment. In the future, with the development of artificial intelligence, the development of computer network technology based on artificial intelligence will usher in a more convenient information service structure, thus injecting infinite vitality into human society. This is also the key to embody the charm of science and technology.

3.3 Data Mining

In computer network security, intrusion detection technology plays an important role in ensuring the stable operation of the system. Intrusion detection accurately determines the integrity, security and confidentiality of data information. Data mining technology uses information collection, extraction and processing of data reports to report the stable state of the system to users so as to master the running state of the computer. Therefore, data mining technology plays an important role in intrusion detection. The technology can also analyze external signals and local connections, host exchanges, effectively identify intrusion programs through technical capabilities, and comprehensively compare the form of foreign intrusion into the local database with that when no intrusion occurs. In this way, when the computer is invaded by the same process again, it can efficiently judge and formulate the response plan in time. Artificial intelligence has strong memory and learning functions, enhances the computer's ability to detect intrusion objects, makes detection more accurate, and creates lovers' conditions for the stable operation of the computer.

4. Factors Affecting Computer Network Information Security under the Background of Big Data

4.1 Influence of Computer Network Virus

The computer network itself has the advantage of information sharing. Under the background of big data, the characteristics of information sharing are continuously strengthened. This advantage not only provides convenience for people, but also increases the risk of computer receiving virus invasion. At present, there are many websites that maliciously invade computers on the Internet.

They attract users to open and click by establishing a formal network. At the same time, through the Internet, the virus invades the computer, thus achieving the purpose of stealing personal information in the computer. There are more and more websites with viruses now, which makes the probability of computers receiving virus invasion more and more when we surf the Internet, laying a hidden danger for the storage of computer network information afterwards.

4.2 The Influence of Computer Network Technology

In the era of big data, information sharing and information integration have been realized globally, which provides convenience for people in different industries to obtain information. However, the expansion of access to information channels and the popularity of information increase the probability of private information theft. Some illegal personnel can make huge profits by selling personal information, which leads to the risk that our personal information will be disclosed at any time. Nowadays, computer network information is mainly protected by TCP/IP. However, with the development of the times, this technology is no longer able to resist most hackers' invasion, resulting in information transmission and storage can not ensure security.

5. Analysis of Future Development Trend of Artificial Intelligence in Computer Network Technology

5.1 The Development Trend of Service

Artificial intelligence technology is a technology to meet the actual needs of users. How to provide users with more high-quality and diversified services in the development work has become the main goal of the current artificial intelligence development work. The artificial intelligence used by people needs to be integrated into the process of life, and it has an inseparable connection with the development of artificial intelligence both at work and in life. In the face of the current demand and diversified development, it is more necessary to carry out in-depth market research and analysis, so as to improve the quality of service for people served by artificial intelligence.

5.2 Develop Towards Sharing and Integrate into Society

Under the background of the big data era, with the deepening development of economic globalization, the sharing of technology and information has become an inevitable trend in the work of computer network technology, which can promote exchanges, cooperation and common development among people. The shared development of artificial intelligence makes the room for improvement of artificial intelligence development technology larger and the innovation ability further improved. As the main platform for the development of artificial intelligence, computer network needs to gradually make breakthroughs in self-technology and enhance the related work of software development in line with international standards. At the same time, the development technology and digital information are effectively combined to promote the joint promotion of artificial intelligence and intelligence. People are looking at the world with a brand-new attitude, and artificial intelligence can become an important tool to understand the world and society, so the development of artificial intelligence is very necessary.

6. Optimization Measures for Security Risks in Computer Network Information under the Background of Big Data

Technology can't shut down interpersonal communication. Although the technology of artificial intelligence tends to be mature, it can not accurately judge some situations in interpersonal communication, and it is difficult to accurately perceive the complex ideas between people. Relying too much on artificial intelligence technology will reduce people's communicative ability. Therefore, people are encouraged to actively integrate into human-computer interaction. In the big data environment, data information is easy to leak and lose, which brings great influence to users and enterprises. Therefore, in the future technical research, we should strengthen the security protection of network data to ensure the privacy of users.

7. Conclusion

Comprehensive analysis shows that computer network plays an important role in people's life and production in the era of big data, and various problems of computer network technology can be effectively dealt with through artificial intelligence. At present, the computer information processing ability is in a developing period. The application of artificial intelligence has strong data processing ability, can effectively deal with the deficiencies in computer information processing, and has certain autonomy. Therefore, technicians should also strengthen the research on artificial intelligence and introduce advanced technologies to optimize artificial intelligence, thus providing more convenient conditions for people.

References

[1] Liu Hefeng. Computer network security strategy in the era of big data [J]. Electronic technology and software program, 2019 (18): 212-213

[2] Liu renchi. Analysis of the application of artificial intelligence in computer network technology [J]. Communication world, 2019,26 (02): 125

[3] Hui Feifei. Analysis of modern application of computer science and technology [J]. Computer products and circulation, 2019 (07): 14

[4] Xia Dongmei. Construction of network security system based on smart campus [J]. Smart city, 2019519:13-14

[5] Cai Hu. Analysis of operation and maintenance and development trend of computer network in Colleges and universities [J]. Computer products and circulation, 2019,10:210

[6] Ma Yi. Discussion on computer network information security protection technology under the background of big data era [J]. Computer knowledge and technology, 2017,13 (25): 59-60 + 62