Explore the Convergence of Computer Network Technology and Artificial Intelligence in Universities in the Era of Big Data

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Abstract: In recent years, the development space of the computer industry has continued to expand. The representative of computer network technology has marked the establishment and promotion of artificial intelligence, making computer network technology a mainstream development trend today. Taking the background of the era of big data as an example, the total amount of data and types are unprecedentedly greater than before, and the complexity of the network environment is becoming increasingly serious. Here, we set strict standards for the use of this technology and deeply integrate university computer network technology and artificial intelligence, fully show the value and impact of computer network technology.

Introduction

Along with the innovation and development of human social civilization and science and technology, the period of computer network innovation has been reduced to a certain extent. In addition, the humanized and intelligent service system of computer networks has attracted attention. With the application and promotion of artificial intelligence, it has greatly satisfied students' demands for technology and made them quickly updated.

1. Theoretical overview

1.1 The era of big data

In general, big data refers to a relatively dense and diverse collection of data, and the data collection is scientifically arranged with the help of big data processing methods. In particular, the characteristics of these data must be understood. First of all, there are many types of data and obvious diversification characteristics. At this stage, diversification is the characteristic of the origin of computer data, which has increased the amount of data. Secondly, the scale of data continues to expand. In general, the data capacity is higher than 10 terabytes. Finally, there is some truth in the data. The earliest data sources were successively cropped, and the new-type data transmission and processing efficiency was relatively high, which fundamentally strengthened the computer system functions [1].

1.2 Computer Network Technology

When the computer network is running, the technical task of the computer network is to achieve coordination and distribution, which fully demonstrates the value of the application of the technology. In addition, it relies more on twisted pairs and more efficient network infrastructure. Enhance the cooperation between the operating system, management software and communication protocols, and promote the sharing of computer network data resources. Nowadays, the informatization industry follows closely behind. It needs to pay attention to computer network technology, use it scientifically, and have a new understanding of the technology and highlights its effectiveness.

Guided by the era of big data, it has broadened the application channels of computer network technology to the greatest extent, providing convenience for students to learn and live, greatly improving their quality of life, and also accelerating the development process of the domestic

information industry and corresponding technical support. Openness is one of the characteristics of Internet applications, further highlighting the seriousness of computer network security issues, such as hacking, virus erosion and other threats to the security and efficacy of computer networks. It also limits the development of this technology schedule. On the other hand, due to the influence of the era of big data, the amount of data has expanded compared to the past, which has caused problems in the use of computer networks, such as incomplete information screening and imperfect network scientific management. Based on this, computer network technology needs to make comprehensive adjustments and carry out in-depth research.

1.3 Artificial Intelligence

Artificial intelligence is the latest technology currently being developed, which contains more subject knowledge, such as mathematical knowledge, psychological knowledge, and philosophical knowledge. Artificial intelligence can use environmental perception to respond quickly, and the response can complete goals and improve economic efficiency. Today, the technology has been widely used in various fields, such as mobile smart assistants, news recommendation, translation, navigation, etc. [2].

2. Development situation of computer network technology

With the continuous innovation and breakthroughs in science and technology, the information update rate has also accelerated, and the amount of data has gradually increased. At the same time, the number of global informatization industries is increasing, which has broadened the use of computer network technology and gradually penetrated into the student's learning life, such as teaching management, gardening, and enterprise management. It is a key channel for students to browse information. Based on the background of big data, the value of computer network technology has a great impact, and it also faces difficulties and challenges.

2.1 Security issues

At present, the amount of information is exploding, and more information and data resources can be obtained by using computer network technology. During the period of data collection, because of their weak awareness of self-preparation, computer network security problems have become increasingly serious. In addition, because computer networks have a certain degree of openness, users can view and publish information anytime, anywhere, which means that online spam information is gradually increasing, and maintenance is more difficult, and computer security is once again attacked. At the same time, hacking and virus intrusion will affect the security of computer networks [3].

2.2 Information troubleshooting issues

In the context of today's society, China has ushered in the era of big data. Affected by the era of big data, the amount of data has expanded dramatically, and the types of data have also increased. Representatives are audio and video, but their effectiveness continues to decline. In the era of big data, strict standards for data processing efficiency and timeliness have been proposed. How to quickly check valid information in a large amount of data is a key issue that colleges and universities should pay attention to.

2.3 Network management efficiency issues

During the development of computer network technology, the network scale continued to expand, the system structure became more and more cumbersome, and the problems of large number of managements, low efficiency, insufficient depth and other problems emerged, which greatly increased the difficulty of computer network management.

3. The advantages and development of artificial intelligence technology

3.1 Advantages

① Low investment cost

Based on traditional computer network technology, the application of artificial intelligence can maximize the information processing rate and accuracy, save network resources, and avoid excessive consumption. Based on the background of big data, deeply integrate computer network technology and artificial intelligence, and select the best control method to effectively process data information. This reduces operating costs, enhances budget efficiency, and continuously highlights the recent state of the benefits of computer network systems [4].

② Strong learning ability

With the background of the era of big data, the amount and type of information is continuously enriched and filled. However, the role and meaning of this information are significantly different, and the application value is very high. In comparison, strict requirements have been put forward for the efficiency and accuracy of employee information collection and processing. With regard to artificial intelligence, it has a strong learning ability and accelerates the speed of computer network technology innovation. The penetration of artificial intelligence in this technology can maximize the information discrimination and analysis skills. Information can provide complete data information for the development of various industries in the process of collection, prediction, sorting and analysis, and comprehensively promote the development strategy of computer network technology.

③ Handling fuzzy information

With the advent of the era of big data, computer network technology has been widely used in various fields to efficiently complete information processing and organization. The sustained, rapid and healthy development of the national economy has widened the amount and type of data and information used by many industries to a certain extent. Up to now, backward computer network information technology has not been able to meet human needs. In addition, it cannot process fuzzy information with high efficiency. Therefore, we should increase innovation. Fusion of computer network technology and artificial intelligence can use fuzzy logic method to process this fuzzy information and enhance the information processing efficiency from the root. With the help of artificial intelligence technology, the network management data is improved and updated on a large scale, the computer network framework is innovated, and the information processing hierarchical method is selected to ensure the security of network operations.

3.2 Development and application

① Smart home

With the support and support of the Internet of Things technology, smart homes further integrate cloud computing and software and hardware systems, and highlight the intelligent features of both to create a smart home atmosphere. Users need to remotely control smart home devices through the network. In addition, they can also use the interoperability and self-learning between devices to comprehensively enhance and improve the energy-saving features of the home environment and fully demonstrate their convenience and safety. With the vigorous development of the Internet of Things technology, the smart home model will change greatly with the current situation. Similarly, artificial intelligence technology has also played a role in driving the changes in smart homes. So far, the initial stage of artificial intelligence is very practical in smart homes, such as intelligent operation of air-conditioning, washing machines, curtains, televisions and other equipment through network technology, which fits people's lives. With the introduction of intelligent equipment to add color to human life, make life simple and intelligent. The continuous use of artificial intelligence, using smart home equipment to collect the required data resources, and then transmitting it to the people who need it, such as collecting the TV turn-on time, can achieve intelligent gestures for humans. Deep research is carried out, which can effectively combine human and machine, such as relying on big data, so that people and machines can talk to each other. During the conversation, try to figure out human psychological activities and complete the intelligent adjustment of household equipment, such as combining the current mental state of human Randomly adjust the lights to complete music playback. The integration of science and technology into all aspects of life, the

application of artificial intelligence technology to smart home is an inevitable development trend, which fundamentally accelerates the development process of smart home.

② Smart education

So far, most companies have gradually increased their emphasis on artificial intelligence and invested it in the traditional education industry. Using image discrimination technology, you can basically independently approve examination papers. In addition, the use of speech recognition function can improve the human-computer interaction ability, and achieve remote online question and answer. Infiltrating artificial intelligence in the traditional education field can adjust the problem of uneven distribution of educational resources to the greatest extent, innovate teaching modes, facilitate teachers to better understand and explain, and improve student learning efficiency.

③ Application in the financial industry

The earliest field to use artificial intelligence was the financial industry. In this field, through big data platforms and infiltration of artificial intelligence technology, it is possible to quickly and accurately predict corporate users, and perform accurate risk assessment operations based on inferences and research results. In addition, through intelligent means to explain financial products to users, let users understand more product knowledge, the company's conversion rate has increased significantly.

④ Medical industry application

Artificial intelligence can be found everywhere in various industries and has outstanding research results, such as medical imaging, health management, and medical research. The application of artificial intelligence in the medical industry can make accurate inferences through a series of diagnostic treatments through its data collection and interpretation capabilities, and ultimately enhance the technical level of medical staff. Based on the medical teaching and research environment, the technology is used scientifically and simulations are carried out based on experiments in lesson plans. Through such methods, the accuracy of experimental results is enhanced and education results are further improved. For health management, through its own learning skills and analysis level, it is possible to record the patient's diagnosis and treatment in detail, which is convenient for the scientific formulation of treatment plans. Science and technology are changing with each passing day, artificial intelligence technology is frequently used in daily learning and life, and penetrates into all aspects to facilitate students' better learning.

4. Convergence of computer network technology and artificial intelligence in universities

In the genesis era, the deep integration of computer network technology and artificial intelligence added glory to the entire society and economy, and the integration of the two has largely provided intelligent and humanized service regulations for the majority of user groups.

4.1 Application of artificial intelligence in network security

According to the development trajectory of computer network technology, people's past life and production models have been completely abandoned, which has also spawned many security issues, such as the snooping of personal information of users and computer attacks on viruses. The lagging prevention strategy can no longer meet the current development needs, and its security has gradually weakened. The popularization and reference of artificial intelligence technology effectively solves the current security problem. This technology is widely used in network security, and mainly discusses three aspects of smart firewall, intelligent anti-spam, and intrusion detection [5].

First of all, the traditional firewall of intelligent firewall has strong meaning and belongs to intelligent products. The intelligent firewall and artificial intelligence identification technology are at the core. On the basis of discrimination, data tasks are completed through mathematical and logical methods, so that access control is put in place. Compared with traditional firewalls, smart firewalls are more intelligent and intelligent. Based on the network security maintenance environment, the alarm patrol of the traditional firewall repeatedly sounds, which makes it difficult for users to predict the authenticity of the alarm and seriously damages the program system. With

the promotion and implementation of smart firewalls, the above-mentioned shortcomings are complemented to the greatest extent, and external attacks are accurately blocked, making network sites more secure.

Second, intelligent anti-spam is used to survey user mailboxes and intelligently identify and detect other information. The detailed steps are to deepen the mail into the user's mailbox, and immediately open the mailbox for scanning. If there are traces of virus attacks and spam advertisements found, the intelligent system will actively detect and develop solutions to protect the mailbox from external interference.

Finally, intrusion detection is the core element of the intelligent firewall, which fully reveals the value of network security protection. When researching and organizing network data, you can quickly query the insecure factors and data in the network, remove such insecure factors, and then transmit them to users.

4.2 Application of artificial intelligence in network management

So far, the difficulty of network management continues to increase. The fundamental reason is that computer networks have a certain degree of sharing and dynamics. Intelligent network management technology can quickly handle this problem. Deeply integrate computer network technology and artificial intelligence, draw on the knowledge and experience of professionals, and comprehensively integrate network information, so that network management problems can be quickly handled.

Expert knowledge base refers to the knowledge repository possessed by experts, and the knowledge in their brains can be recorded in electronic devices. The expert knowledge base covers a wide range, including not only book knowledge, but also practical experience. The knowledge base can be used to solve difficult problems and improve the efficiency of computer network management.

4.3 Application of artificial intelligence in information processing

The application of artificial intelligence in information processing, using this technology can more conveniently process information data, reflect its intelligent characteristics, let users feel humanized and intelligent services, and enhance the efficiency of computer network services [6]. When a user inquires certain information, artificial intelligence will analyze the information for the first time, and use fuzzy technology to mine information resources in a deep level, clean up valuable information, ensure that the information used by the user is accurate, and save user time to the greatest extent. Artificial intelligence technology has unique skills in special environments and can complete interaction and feedback tasks for other transmitted information. Combined with different user-defined data, it can automatically search for data and intelligently transmit it to a specific area to realize humanized and personalized query of information.

5. Conclusion

In summary, in the era of big data, university computer network technology has been supported by more platforms in the development process. The innovation and development of artificial intelligence technology is the inevitable trend of the current computer network technology development. Network technology and artificial intelligence demonstrate the superiority of big data processing methods and enhance processing quality. The further construction of the expert system and artificial neural network system can fundamentally strengthen the security of computer network technology, and at the same time achieve scientific management and careful evaluation of different data, and promote the computer network technology in universities to move towards intelligent and humane development.

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