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Application Analysis of Big Data Technology in Artificial Intelligence

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Abstract: ***The essence of big data technology lies in various techniques such as statistical analysis and data integration built upon computer systems, and artificial intelligence (AI) is also one of the technologies within the field of AI. Practice has shown that there is a certain correlation between the developments of different technologies, and whether it is big data technology or AI technology, they are more or less interconnected. In recent years, China has delved deeper into the research of AI technology, and as a result, AI has been involved in various fields, with the support of big data being indispensable. By integrating big data technology into AI, it can effectively serve people's lives and work. The following discussion will explore the application of big data technology in AI, with the aim of promoting the healthy and orderly development of AI by using big data as a medium for information gathering.***

Keywords: Big data technology; Artificial intelligence technology; Application.

1. INTRODUCTION

With the rapid development of information technology and the Internet, big data technology is gradually born. The massive information storage performance in network resources provides more powerful technical support for big data storage. The Internet has various functions, which can not only collect various user information, but also process various data information in a centralized manner. The development of artificial intelligence relies on various disciplines such as mathematics, science, and psychology. Regularly summarizing the trajectory of human daily activities can greatly promote the improvement of artificial intelligence technology, and enable the continuous improvement and development of artificial intelligence technology. So the application of big data technology in artificial intelligence has very important practical significance for promoting the development of artificial intelligence.

2. THE MAIN TECHNOLOGIES OF BIG DATA

2.1 Collection of Big Data

The rapid development of the computer industry has led to an increasing trend in the quantity of data information. In the operation of various industries, big data is needed for analysis. For example, in the common automotive manufacturing industry, there are applications of big data technology in collecting positioning systems and various industrial manufacturing fields. The emergence of big data can be said to have changed the traditional way of information processing. Under the background of big data, the information processing capability is stronger and the amount of data is larger, greatly saving the consumption of manpower and material resources. The collected information and data are analyzed and processed centrally, which can quickly grasp the accuracy of data and grasp the development direction of enterprises.

2.2 Storage methods for big data

At present, the storage method of big data mainly relies on databases in computers to analyze and process data and information through data nodes, making the processing process convenient and efficient. This method is widely used in the field of technology [3]. In the process of rapid technological development, the drawbacks of this node processing method have gradually become apparent, so many technicians have applied big data processing methods to other places. In the current development of big data, people's research direction mainly focuses on how to summarize and save the collected data and information, filter out the truly useful data and information, and filter out some useless data, so as to more efficiently utilize the space of the database and reduce the burden of system operation.

2.3 Retrieval methods for big data

Big data itself has strong characteristics. In the process of data retrieval, a large number of keywords are inputted for retrieval, but a large amount of data is not fully processed, which leads to the displayed information not meeting the expectations of users. In order to change this situation, software engineers need to develop some new systems to handle the information of data in an open manner, so as to achieve real-time access to big data.

2.4 Usage of Big Data

The collection of big data comes from various aspects of human life, and it is precisely because of this that big data can be applied to various fields of life. Whether it is people's travel footprints or various records of online consumption, they are all various data and information in people's lives. From a large amount of data and information, as long as valuable information is found, it can help analyze the data and reduce various risk problems. However, there are still many fields in real life that do not have the application of big data, so technical personnel need to conduct research and mining. Only through continuous exploration and innovation can big data technology be more widely applied in artificial intelligence.

3. THE SCIENTIFIC APPLICATION OF BIG DATA TECHNOLOGY IN ARTIFICIAL INTELLIGENCE

3.1 Construction of Basic Database

The analysis and organization function of big data also belongs to a type of artificial intelligence technology. Due to the lack of autonomous judgment ability of machine equipment, big data should be used as support in the process of artificial intelligence development. Whether the establishment of databases meets the requirements directly affects the future development direction of artificial intelligence. So it is imperative to apply big data technology to artificial intelligence. In the process of construction, it is necessary to combine the actual situation of big data to optimize the allocation of resources, so that the collection and processing functions of big data can meet the development background of the current era, effectively expand the development direction of artificial intelligence, and effectively promote the rapid development of artificial intelligence.

3.2 Big Data Algorithms

In the development of artificial intelligence, the construction of databases should be the prerequisite for updating and improving algorithms for big data. Better analysis and utilization of data to enhance the processing capabilities of data information. Enhance the effectiveness of information filtering and processing by optimizing basic algorithms and paths. In the current development process of AI, we should take advantage of the Internet and information technology, actively expand the channels for data collection and accumulation, and effectively process relevant data information, so as to achieve more efficient data integration in the future.

3.3 Research and development of IoT sensing technology

In the process of research and development, artificial intelligence technology can effectively utilize the role of big data. On the one hand, it is necessary to pay attention to the basic databases and algorithms in artificial intelligence, and at the same time, corresponding innovations and improvements should be made based on actual situations. Strengthen the development and management of IoT sensing technology. In the future development, the application prospects of artificial intelligence technology are very broad, especially in the field of human-computer interaction. The use of IoT sensing technology can expand the dissemination of big data technology applications, effectively enhance the effectiveness of big data usage, and optimize human-machine interaction while optimizing artificial intelligence technology. Unconsciously, more industries and enterprises are increasing their attention to IoT technology.

4. THE APPLICATION OF BIG DATA IN THE FIELD OF ARTIFICIAL INTELLIGENCE

4.1 Artificial Intelligence Robots

The innovation and development of intelligent robots cannot be separated from the support of big data. The reason why intelligent robots can simulate human behavior is mainly by analyzing human language, using big data

technology to collect and organize human daily activities, and then setting big data information into robot parameters. By sending instructions to the robot through designated users, the robot completes the corresponding tasks according to the instructions. After setting specific parameters, use artificial intelligence technology to scientifically utilize this data. Artificial intelligence robots can not only analyze human language and behavior, but also make judgments on human language and behavior, thereby enhancing their application capabilities. In order to achieve accurate translation of human language, it is necessary to update and optimize the language database in artificial intelligence, with more neuron nodes. The more neuron nodes there are, the stronger the recognition ability of human language, and the higher the recognition efficiency.

4.2 Intelligent Manufacturing

Intelligent manufacturing technology is a new self-produced technology that also collects and organizes various parameters and data in the UI human manufacturing process through the use of big data, and then uses intelligent technology to realize the application of data. Intelligent manufacturing is mainly divided into two main parts, one is intelligent manufacturing technology, and the other is intelligent manufacturing systems. The main force in the operation of intelligent manufacturing technology is the intelligent manufacturing system, which is an important guarantee for the entire system operation. Intelligent manufacturing systems can analyze and make decisions on important data during the manufacturing process, achieving intelligent production activities. In the future development of manufacturing industry, intelligent control technology is the trend. Not only can it fulfill some fundamental roles in the manufacturing industry, but it can also carry out data collection and data gathering. Enterprises can use big data to analyze their target audience, and in the process of promotion and sales, they can place advertisements more accurately, making promotion and sales work more targeted. Realize precise marketing push

4.3 Intelligent Agriculture

The prerequisite for the development of intelligent agriculture is to have a relatively stable development environment. Various environmental impacts can achieve a controllable condition. To form a relatively advanced agricultural development mode through industrialized production. This production method has the characteristics of high efficiency and speed in use, and can achieve sustainable development in agricultural development. The development of intelligent agriculture can achieve all-weather and off-season production. Intelligent agriculture will encounter various difficulties in the research and development process, and requires the integration of advanced technologies from multiple fields, involving a wide range of professional knowledge. The development of intelligent agricultural technology can effectively promote the development of agriculture and further enhance agricultural productivity. In the current development of agriculture, the integration of big data technology can collect and analyze various data information in agricultural production, and then use it scientifically and reasonably to establish corresponding data instructions. The use of intelligent agriculture also includes the establishment of mobile applications to adjust production methods based on the actual situation of crops. Understanding the basic growth conditions of crops can promote the rapid development of agricultural production. Big data uses data from the growth of crops on mobile phones for scientific analysis, helping farmers to predict future crop yields and achieve more scientific and reasonable crop management, improving the effectiveness of agricultural activities, and providing farmers with more convenience and services.

4.4 Smart Grid

At present, the use of smart grids in integrated high-speed bidirectional communication networks can effectively improve the safety and stability of the power grid during operation, providing guarantees for people's lives and work. Satisfy people's various usage needs in daily life. The future development direction of the power grid will inevitably be intelligent development. Integrating communication technology and computer technology to achieve high-level intelligent development. Electric power data has the characteristics of diverse and complex types, and the production speed is faster. In the future, big data technology can enhance the use of electricity. By analyzing the electricity consumption situation of users, the configuration of the power grid can be gradually improved, making residential electricity consumption more scientific and reasonable. Through big data monitoring, electrical equipment can be more complete, and electricity consumption can be more guaranteed.

4.5 Smart City

The rapid development of science and technology has accelerated the process of urbanization. Gradually moving cities towards intelligence and digitization, while making urban management increasingly advanced, providing people with a more comfortable and convenient living environment. Enhancing people's living experience in the city, the content of smart city construction projects is relatively complex, involving knowledge from many fields. It is not only necessary to achieve intelligent management of the city, but also to achieve intelligent transportation, intelligent buildings, and so on. The intelligent composition of each part can constitute the construction of urban intelligence. Through the integrated use of the Internet and the Internet of Things, high-speed analysis and calculation of data can be achieved, so that urban residents' travel, equipment monitoring and other contents can be comprehensively supervised and managed, and the development of urban public utilities will become more intelligent. The smart city system needs to supervise and manage various aspects of the city, analyze data to analyze the development situation of the city, predict the future economic development direction of the city, and provide more decision support for urban managers. The urban air quality should also undergo intelligent data detection, analyzing the main sources of urban pollution, helping urban managers better analyze and manage the city, and improving maintenance and management efficiency. Only in this way can the intelligent management of urban management be further achieved, and the happiness and sense of residence of urban residents be enhanced.

5. CONCLUSION

While developing artificial intelligence technology, technicians need to have a correct understanding of the role and advantages of big data technology in the field of artificial intelligence, and try to analyze how to effectively apply big data technology to artificial intelligence, effectively improve the level of urban artificial intelligence, and promote and develop the level of artificial intelligence better. This can make the development of artificial intelligence irreplaceable. In specific applications, the advantages of using big data computing and analysis to analyze and make decisions based on data information make resource integration and information retrieval more convenient, and the integration of big data technology and artificial intelligence technology can better enrich people's lives.

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