

Research on the Application of Cloud Computing Network Technology and Computer Big Data Analysis Technology

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Abstract: Along with the development of computer network technology, various fields have ushered in the era of big data. The reasonable exploitation of computer information resources and the adoption of cloud computing network technology and computer big data analysis technology for information data processing can promote the stable development of society. However, cloud computing and big data require high professionalism, and how to apply them scientifically and reasonably to give full play to the maximum value of computer technology is the main research direction. This paper discusses the necessity and shortage of data processing at first, then analyzes the advantages and disadvantages of cloud computing network technology and big data analysis technology, and finally discusses the specific application of cloud computing network technology and big data analysis technology, so that they can complement each other and play a greater role in the future.

Keywords: cloud computing, network technology, computer, big data, application research

1. Introduction

Due to the rapid development of technology, people have focused their research in the direction of big data, cloud computing, and artificial intelligence in recent years. The continuous development of such new technologies is also continuing to improve people's daily life and work style. Nowadays, due to the rapid growth rate of information in the network era, the requirements of various industries in the field of information computing and processing are gradually increasing. The analysis technology of big data has significant advantageous features such as visualization and big data analysis and prediction in computing, while cloud computing network technology has features such as virtualization and multi-tenancy. Cloud computing technology and computing and big data analysis technology can achieve the accuracy of data mining, while the analysis of data computing powerful, all walks of life are gradually applying cloud computing and computer technology. Therefore, it is significant to deeply explore cloud computing network technology and computer big data analysis technology, and also can lay an excellent foundation for the development of information technology and sustainable social development.

2. Necessity and shortcomings of data processing

2.1. Necessity of data processing

2.1.1. Speeding up the development and utilization of information data

The information system formed through the network contains a large amount of data information, and it is possible to extract the information data that have value for use through the analysis and research of the data information system^[1]. There are various types of data information, complex structure, and low value density, so it is likely that some of the information data has less application significance. And in order to find more meaningful information content in the large number of complex data information systems, only data processing and in-depth research can be conducted to turn data information into useful resources with rich connotation, various forms and meaningfulness. From this viewpoint, data processing is the comprehensive use of the original data and information content again, and only through data processing can the meaning of the original data be fully played out, so that the data and information resources play their due value.

2.1.2. Improving the scientific character of decision making

Data processing also brings great help to the modern management of enterprises. Scientific management not only needs to understand the surface problems of the event, but also needs to further understand the essence of the event and sort out the correlation between the events, so as to find out the problem and provide targeted treatment measures^[2]. To achieve this goal, it is necessary to analyze the essence of the event from the surface through the statistics and analysis of data, and to discover the hidden regularity inside the event, so as to provide a reference basis for scientific decision-making.

2.2. Shortcomings of data processing

The amount of information formed through the network is very rich and its growth speed is fast, but because the information order is disorganized, the data value density is often very low, and only a small part in a wide range of information resources is likely to be valuable, hence it is necessary to integrate all the information so that the meaning contained in it can be truly discovered. This requires more precise analysis and faster processing to meet the requirements of social development.

The defects of traditional processing methods mainly lie in the lack of security and reliability causing the inability to manage unstructured information efficiently. Information security has always been the difficulty of data analysis, a large amount of data information is about personal privacy and commercial secrets, once the information security work is not handled properly, it will cause data information leakage and huge losses^[3]. If all the data processing projects are given to the big data analysis enterprises to be responsible, it will waste a lot of money and time of the company, and to a certain extent, it will reduce the overall operating efficiency of the company. Therefore, it is especially important to deeply study cloud computing network technology and computer big data analysis technology.

3. The basic connotation of cloud computing network technology and computer big data analysis technology

3.1. Cloud computing network technology

Cloud computing technology refers to the use of the "cloud" of the Internet, which can decompose the massive data computing process into numerous small processes, and then use the operating system composed of multiple databases as the basis to effectively manage the results of the feedback from the small processes and send them back to the user. At this stage, it has been regarded as the product of the integration of distributed computing, utility computing, parallel computing and its load balancing, Internet storage and other advanced information technology, and has a higher degree of flexibility, security, scalability, intelligence and other new features. The generation of cloud computing network has realized the transformation of the pool of funds into virtual funds, and then put a full range of data on top of these funds, forming public clouds, private clouds and hybrid clouds and other forms.

3.2. Computer big data analysis technology

Big data is a collection of large data that cannot be captured, managed and processed by conventional software and tools within a limited period of time, and has distinctive features such as massive volume, diversity, high speed, authenticity and low value density^[4]. Compared with the traditional big data warehouse analysis, computer big data analysis can analyze the object for unstructured data and obtain a greater scope of insight from the data. As a companion of the era of big data analysis, computerized big data analysis has emerged in the business field, and it is an important focus of interest that various industries chase and its space for future development will be immeasurable.

4. Advantages of cloud computing network technology and computer big data analysis technology

4.1. Advantages of cloud computing network technology

Cloud computing is the result of the combination of traditional computer technology and Internet technology, which has the following advantages in big data mining: At first, the cost of computing is reduced. Compared with the ordinary computer operation mode, cloud computing does not need hard disk and is completely able to complete the operation in the cloud, saving a lot of hard disk space and reducing the operation time. Then, the operation efficiency is improved. The cloud computer system

contains fewer programs and ensures the smooth and safe work of the computer system, which improves the working efficiency of the computer system. Finally, data storage is more secure. Because of the traditional hard disk space limitations, it is easy to occur the phenomenon of hard disk rupture and thus cause a lot of data loss. The cloud computer space is basically unlimited, a large amount of data stored in the cloud is equivalent to the completion of a backup, thus ensuring the security of information.

4.2. Advantages of computer big data analysis technology

The main advantages of computer big data analysis technology are: One, big data mining algorithm. Big data mining algorithm is the key technology of big data analysis, due to the development of network information technology, a lot of big data algorithms have been used in data analysis to analyze various categories and different formats of Internet information. At present, the common big data mining algorithms generally include decision tree calculation, plain Bayesian calculation, support vector machine calculation, etc. However, these calculations have corresponding advantages and drawbacks, and in real applications, it is often necessary to scientifically select one or several calculation methods to carry out data analysis and mining work^[5]. The use of big data mining algorithms will be able to explore the value of data information well. Second, predictable data analysis. Since big data analysis is based on the development of network technology, big data analysis can use models to make scientific forecasts of the future development of some events. For example, product companies can use the market sales information to predict the market supply and demand of products in the future period, which provides the basis for product production. Third, the product visualization analysis technology. This is a key function of big data analysis, the use of visual analysis technology can show the product data structure and characteristics of information more intuitive.

5. Disadvantages of cloud computing network technology and computer big data analysis technology

5.1. Disadvantages of cloud computing network technology

First, the security is not enough. Although the cloud computing space is very large, and can even be called "unlimited". But for the use of customer security issues, the current stage has not reached a practical guarantee. Second, there are also some potential safety hazards in the cloud computing network virtualization system. Virtualization operation scenario, whether it is the operating system, or the basic hardware, will bring a lot of changes. So will the field of digital information storage, computing and other fields. Therefore, to a certain extent, the cloud computing network virtualization design brings hidden risks to the customer's information security.

5.2. Disadvantages of computer big data analysis technology

Firstly, if information in various fields is collected intentionally, it will interfere with the life of the public to a certain extent and create security risks such as privacy leakage^[6]. Secondly, the generation of false data. In the background of the comprehensive popularization of big data, there are still more information that cannot be screened and examined effectively, but be advertised in many platforms, and these untrue propaganda will directly cause some information to become false data, which will have adverse effects.

6. Application of cloud computing network technology and computer big data analysis technology

6.1. Widely used in the field of transportation

Nowadays, as the overall economic consumption level in China continues to grow, the general public has set more standards for the quality of daily life. "Private cars" are everywhere, which indeed promotes the overall economic development of the city and increases the local consumption level, but also causes the traffic problems in the city from time to time. Due to the space and road constraints of urban planning, the rapidly rising number of vehicles can not be accommodated obviously, especially in those relatively developed cities, and the peak congestion during commuting hours has become the norm. The application of big data analysis and cloud computing network technology to the transportation industry has developed into "smart transportation". By installing traffic sensors to specific locations, real-time detection of the corresponding traffic chapter is realized. By monitoring and integrating the means of

transmission and acquisition of various road signals, the road traffic status monitoring and management capabilities are effectively improved, and the process of road traffic intelligence and integration is promoted, and the traffic congestion problems in the city are alleviated on the basis of efficient information collection. In addition, with the application of big data analysis technology and cloud computing network information technology, people can use the specially designed traffic application to make detailed road condition information inquiries^[7]. Not only can we know the specific mileage to the destination, but also we can check the actual congestion of each road, which greatly optimizes people's experience of traffic participation.

6.2. Widely used in the field of sales

The extensive use of big data analysis and cloud computing network technology in the field of sales has formed a more mature operation system and the benefits it brings are particularly significant so far. While promoting the development of new forms of accurate sales and personalized marketing, they also provide a lot of convenience in various aspects such as managing and maintaining customer relationships. For example, when big data analysis and cloud computing technology are applied to e-commerce platforms, the platform automatically records and retains consumers' online browsing footprints, including browsing time, page information, and number of clicks, so as to instantly grasp consumers' willingness to purchase and transform their purchase motivation into purchase behavior^[8]. After acquiring the above data information, it is collected by the terminal platform in time and becomes the basis for consumer intention prediction. After that, the system will use the predicted information to recommend products that may be of interest to the corresponding customers to catch the eyes of the target customers, thus effective consumption behavior is promoted and the accurate promotion of the e-commerce platform is completed.

6.3. Widely used in the field of medicine

The medical service industry, as a traditional industry, has undoubtedly played a great role in pushing the application of big data and cloud computing. The medical service field includes clinical services, payment/pricing, technology research and development, innovative business models, and public health, which are the key research areas on the basis of big data and cloud computing network in the future. Among these five areas, the research and application of big data technology and cloud computing technology is undoubtedly of great value to achieve efficient improvement of treatment quality and effectiveness. Based on the use of big data and cloud computing technology, the effectiveness of patient treatment and the quality of health services can be effectively improved. In the consultation process, a complete database of basic patient information can be established to facilitate the medical staff of each department to make health-specific care plans for patients and thus achieve the purpose of improving the overall health service level^[9]. In terms of the overall process of treatment, the rational use of big data analysis and cloud computing technology can carry out data collection for patients and provide an effective basis for medical services for patients.

7. Conclusion

The development of computer network technology has brought about great changes in the daily life and production operation mode of human beings, thus producing richer digital information. The popularity of cloud computing technology, especially the joint use of cloud computing technology and computer big data analysis technology, has given full play to many fields, thus promoting the continuous development of society.

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