

Research on Computer Information Processing Technology in the Era of Big Data

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Keywords: computer; information processing technology; big data; cloud storage

Abstract: The extensive popularization of Internet and computer technology prompts obvious changes in people's daily life, work and study. The data volume in various industries increases, and people begin enter the era of big data. In the era of big data, it is more convenient to acquire and transfer information, breaking the limits of time and space and realizing the joint construction and sharing. In addition, the complexity of information resources affects the information processing value to different extents, which requires computer information processing technology to be constantly innovated and improved, so as to enhance the information processing efficiency, explore the information potential value and contribute more to social progress and development. This paper analyzes the computer processing technology in the era of big data, grasp technological points and adapt to the new trend to promote technological innovation and development.

With the progress and development of modern society, computer technology and network technology develop rapidly and become an indispensable component in social production and life. The extensive application of information technology generates mass data information and opens the door for the era of big data. Under this background, how to explore valuable information from mass data and apply computer information processing technology is the inevitable choice, which requires computer information processing technology to embrace the challenges of the times, continuously make adjustment and improvement, realize the acquisition, management and processing of data information, ensure the stable operation of computer system, reflect original social function and have a profound significance to the harmony and stable development of modern society. Researches and analysis related to computer information processing technology in the era of big data is conducive to improving problems and promoting it to develop towards higher level.

1. Introduction to the Era of Big Data

Nowadays, people have entered the era of big data, however, many people still lack a recognition of big data. Big data, is not a virtual existence, but mass data information generated in social production and life relying on information technology along with the rapid development of information and network technology. By virtue of its unique advantages, big data has penetrated in various aspects in social production and life, difficult to be separated. For instance, in terms of advanced technology in Chinese D-series high-speed train, the speed of data recording can reach 1,000,000/s, to acquire and record data through intelligent sensing system and store in network system, to know the real-time operation of high-speed train and to provide guarantee for the safe operation of train [1]. Shopping platforms such as Taobao and Jingdong can obtain valuable information from mass data with big data mining technology and understand the development trend of market and users' consumption direction, so as to provide directions for advertisement promotion, decrease the costs and improve the effectiveness of promotion. It can be seen that big data based on the continuous development and improvement of information technology will make more contribution to people's beautiful life and show great development prospect.

2. Challenges and Opportunities Faced by Computer Information Processing Technology in the Era of Big Data

2.1 Challenges faced by computer information processing technology

In the era of big data, compared with traditional data information processing technology, computer information processing technology is faced with severe challenges after long-term development and improvement. Traditional technology has smaller storage space, mainly with unidirectional transmission. Whereas, in the era of big data, mass data requires larger storage space, which also decides the rapid processing speed and propagation of data information in the era of big data. However, because most countries have insufficient network infrastructure, the transmission demand in the new era cannot be satisfied. It should be noted that in the era of big data, due to the openness of Internet, data information security issues also receive the wide attention from all sectors of society, with the risk of personal information being stolen and illegally utilized, which could bring great losses [2]. In a word, mass data information in database put forward higher requirements for information security. Especially with the rapid development and application of network communication technology, whether beneficial information or harmful information can be transmitted through network. While increasing the propagation speed of data information, it is crucial to strengthen the security protection of information data transmission.

2.2 Opportunities faced by computer information processing technology

In the era of big data, network information technology continuously develop and improve, a large number of frontier technologies appear, especially the data volume increases with the extensive application of mobile intelligent technology and scientific and technological development, which put forward higher requirements for computer information processing technology, as well as new development opportunities. Faced by the backward information processing technology, to further optimize the collection, processing, propagation and storage of data information by virtue of big data technology can effectively improve the level of computer information processing technology and promote the progress and development of modern society [3]. For example, the appearance of information pension system improves Chinese basic social pension system; cloud computing services can realize the processing of complex and mass data, free transfer and downloading relying on network platforms; electronic wallet promote the diversification of payment, and the intellectualization of modern society is greatly enhanced.

In the face of security issues of data information transmission, it is also necessary to strengthen studies on data transmission and data storage, promote the development of firewall and data storage technology, and set time limit of information storage, so as to enlarge the capacity of database. Network is public and open, which also offers a channel for the propagation of Trojan and computer viruses, or the malicious attack from hackers and data information tampering while users obtaining and transmitting data information from network. It brings new challenges for the security protection of data information [4]. This requires technicians to correctly face challenges and opportunities for computer information processing technology, constantly improve their professional ability and take specific measures for security prevention and protection, so as to ensure the secure information transmission on network.

3. Computer Information Processing Technology in the Era of Big Data

Computer information processing technology is related to the era of big data, mainly to explore potential value through information processing, so as to realize information recording, transmission and storage. The information processing development of human society experiences multiple phases. Along with the improving computer, communication technology, micro-electronics technology and storage technology, information processing efficiency is greatly enhanced, to provide reliable reference for follow-up management and decision-making. Computer information processing technology, by virtue of its unique advantages, gradually becomes the main reference for modern

information management and decision-making and has a profound significance on the harmony and stable development of modern society [5]. It can be classified into four types.

3.1 Data acquisition and propagation technology

In the era of big data, data volume is increasing, gradually more dependent on computer information processing technology. However, due to the complex computer information processing technology and mass data, valuable information can be explored by collecting, classification and analysis of information. In actual application, data acquisition and propagation technology make use of advanced technology to extract information from mass data, process it with corresponding methods, and explore valuable and transmission information with clear direction, so as to efficiently improve the efficiency and quality of data information transmission [6].

3.2 Information processing and transmission technology

Faced by challenges of mass data, after data acquisition and management, data information shall be further processed, which is directly related to information processing efficiency and quality. Data acquired and managed are stored in database, and required data information is extracted, classified and processed to improve the accuracy of data information [7]. For users, they do not need all information, but to explore valuable information. Information processing and transmission technology can be applied to extract data information required by users to meet their individualized requirements and enhance the efficiency of information processing and transmission.

3.3 Information storage technology

In the era of big data, the increasing amount of data information collection and transmission put forward higher requirements for computer information storage capability. Although the computer itself has the data information storage function, due to the technology, the existing computer has a small storage capacity, difficult to meet the needs of big data development. If the computer lacks sufficient storage space, it is naturally impossible to perform subsequent operations of the data information. The efficiency and quality of data information processing are not high, which affects the subsequent management and decision-making effectiveness of enterprises. Data information cannot be stored, and it is naturally impossible to effectively develop and utilize big data information, which is not conducive to the market competitive advantage of enterprises to seek sustainable development. Therefore, under the background of the big data era, the application of information storage technology can effectively improve the computer storage performance and better meet the needs of modern social development.

3.4 Information security technology

Information security is one of the most important issues in the current era of big data. While providing convenience for social production and life, it is also necessary to increase the emphasis on information security. Due to the open nature of the network, relying on information technology to acquire and transmit information, the information is gradually transparent, and anyone can obtain information through the network, threatening the information security of individuals or organizations. If the information is illegally stolen and used, it may bring immeasurable loss [8]. Based on this, it is necessary to select reasonable information security technology to process information, deepen the knowledge and understanding of data relationships, and standardize data management. However, there is a potential connection between these data, so it cannot be managed independently. It should be noted that if there is a problem with data in any field, it may affect other data. This requires a comprehensive inspection of the related data to improve the integrity and authenticity of the data information. At the same time, to improve the level of data security system, it is also necessary to establish data information protection in a timely manner, select reasonable and effective data repair methods, and analyze the cause of problems in time when problems occur, and achieve rapid repair and maintenance of data information.

4. The Development Trend of Computer Information Processing Technology in the Era of Big Data

In the era of big data, if the massive data information cannot be effectively managed and processed, it will lead to a sharp increase in the amount of data information, affecting the effective analysis and processing of data information. Especially under the rapid development of social economy, to promote the innovation and application of computer information processing technology can inject vitality into social and economic development. Therefore, in order to meet the needs of the times and efficiently process information, it is necessary to further promote the innovation of traditional information processing technology, achieve efficient and convenient processing of data information, and effectively improve the efficiency and quality of data information processing [9]. At the same time, while computer technology and network technology are developing, computer security risks emerge. Network viruses, Trojans, and hackers can cause the failure in computer information security. Therefore, it is urgent to continuously promote the innovation and improvement of computer information processing technology, cater to the development trend of the times, and realize the effective processing of data information.

4.1 Data information acquisition and storage

In the future development of computer information processing technology in the era of big data, one of the main directions is information acquisition and processing. In the current era, the traditional solid-state monitoring mode cannot meet the needs of data information collection, not only limited to a certain part of the data, but to filter valuable information under the support of cloud technology and network technology, the core of which is cloud computing and cloud storage.

Cloud storage helps the logical virtualization management of storage device. Users' access to the network needs to be implemented by means of cloud storage system, which enables users to break the time and space constraints and access cloud storage in any form. In terms of cloud storage, the core content is based on data storage and management. Besides, the cloud technology is used to help users extract valuable information, and to store and process data information in combination with user needs. For example, HDFS and Hadoop projects can meet the needs of mass data information storage, while Map Reduce can realize massive data calculation and construct the platform for big data analysis.

4.2 The maintenance of information security

Computer information processing is large, and how to mine valuable information in mass data information has become the current top priority. While obtaining data information, information security issues in data processing face serious challenges. In order to ensure data information security and meet the needs of the times development, some improvements can be made from several aspects. Firstly, the diversified information drives the demand for talents in data, which requires colleges and universities to shoulder their responsibilities to cultivate more high-quality talents in data and meet the requirements of social diversified development. Secondly, to strengthen computer information security. With the rapid development of computer technology, new viruses and system vulnerabilities are emerging, threatening the security of computer information. This requires reasonable technology to contain intrusion and dissemination from the source, and choose reasonable firewall technology and information access restriction technology to ensure users' legal access to the database. Any illegal access is not allowed to enter the database, to avoid data tampering. Thirdly, to intensify the monitoring of information security and select monitoring and constraint technology. Once malicious intrusion is found, serious punishment shall be given to maintain users' information security [10]. At the same time, to build a network information security system, strengthen the safety training of relevant personnel, understand the development trend of various industries, and select cutting-edge technologies to ensure the security of data information plays an important role in promoting the efficiency and quality of data information processing.

5. Conclusion

In summary, in the era of big data, mass information is generated in various industries. Whereas, these information is diversified, harmful and valuable. How to maintain information security while effectively developing and utilizing data information is the top priority. Therefore, it is required to correctly treat the sense of urgency of the development of the times, in the face of difficulties, promote the innovation and improvement of computer information processing technology, optimize the collection, transmission, processing and storage of data, establish reasonable and effective security protection technologies, and effectively improve data processing efficiency, so as to make greater contributions to the harmonious and stable development of society.

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