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

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Abstract: The arrival of the era of big data has certain inevitability, which will accelerate the pace of social reform and promote the better development of social economy. In the era of big data, the capacity and structure of data have also undergone tremendous changes. These data also put forward higher requirements for computer information processing technology. In order to better meet the needs of large data operation, it is necessary to study computer information processing technology in depth. This paper makes a related analysis of the computer information processing technology in the era of big data. Through explaining the definition and characteristics of big data, it analyses the challenges and opportunities faced by computer information technology under the background of big data era. Finally, it analyses the development trend of computer information processing technology in the era of big data from different aspects.

1. Introduction

With the rise of the Internet, the number of computer network users is increasing, the activities carried by the Internet are becoming more and more frequent, the amount of information is increasing sharply, and the products of various networks are exploding constantly. The traditional computer information processing technology has been unable to meet the needs of large data processing. The arrival of the big data era has promoted the social and economic development and the process of informationization and digitalization in China, greatly improved people's living standards and work efficiency, and also raised the application requirements of modern computer information technology. Computer information processing technology is widely used in different aspects of human production, life and learning, and has achieved quite ideal results. With the emergence of the big data boom, more and more attention has been paid to the development of this technology. Therefore, it is necessary to study the computer information processing technology in the context of the big data era, and adopt new ideas and concepts to deal with the increasing amount of computer data.

2. Definition and characteristics of big data age

2.1. Definition of big data

Big data refers to the massive, high growth rate and diversified information assets that use new data processing modes such as database tools to make them have stronger decision-making power, insight and process optimization ability. The arrival of the era of big data is inseparable from the rapid development of information technology. Under the background of large data, users can record their location, frequency and mode of use in large data. After the collation and induction of network technology in the later stage, a huge database is finally formed, which provides convenience for information query in the future. As far as the development of big data is concerned, great progress has been made in its scale and speed, which not only promotes the prosperity and development of society to the greatest extent, but also lays a solid technical support for data information maintenance.

2.2. Characteristics of big data

Big data has four characteristics as shown in Figure 1 below. Firstly, the information scale and quantity of large data processing are huge. Secondly, big data itself has a wide range of sources and types of data. Thirdly, big data can provide timely feedback to the collected and collated information. Finally, the low information density of large data means that although the amount of information needed to be processed by computer information technology in the era of large data is huge, the proportion of effective and valuable information is low.
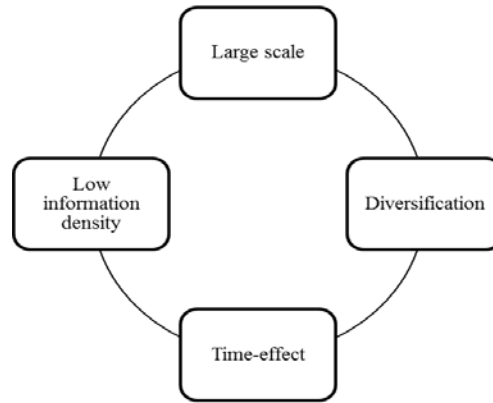
Figure 1. Characteristics of big data

3. Computer information processing technology in the age of big data

Computer information processing technology in the era of big data includes information acquisition, processing and transmission, data information storage and information security protection, as shown in Figure 2 below.
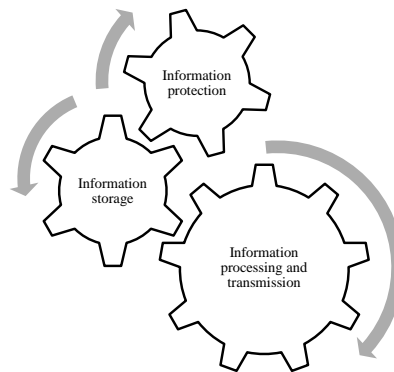
Figure 2. Computer information processing technology

3.1. Information processing and transmission

In the era of big data, the most important thing that computer information processing technology needs to pay attention to is how to get information and how to get useful data from the Internet. Data acquisitions is the real-time and dynamic control of the target data source, and in the database to collect, extract and store the data needed, and then provide other software systems with targeted data information. The processing part of data processing is to store the data according to its own characteristics. Finally, in the process of data transmission, various technical means are used to transmit the data needed by users, so as to achieve the purpose of data utilization and data transmission.

3.2. Storage of data information

The function of storage in computer information processing is to store all the collected data into a specific structural database. When users need relevant data, they can get large-scale data from the database and extract the target data they need. In the era of big data, the database includes large-

scale data, whose data scale and types have undergone tremendous changes, so that accurate data can be obtained in the first period of time when data is needed.

3.3. Information security protection

In order to make the relevant information in the era of big data safe, it is necessary to process the corresponding information safely. In order to achieve the goal of ensuring the information security of data, it could carry out the processing from the following aspects: First, establish a sound computer information security protection system, and train highly qualified professionals to create information security system. Secondly, in the technology of big data information security, it should invest more in hardware products. Finally, it should strengthen the maintenance and detection of important data. In the era of big data, there is large-scale data and information, which increases the probability of stealing information. Therefore, it need to better monitor and protect important information.

4. Challenges and development trends of computer information processing technology in the age of big data

4.1. Challenges of computer information processing technology in the age of big data

In today's big data era, how to collect, screen and process huge data information has become an important problem to be solved in today's computer information processing technology. In the development trend of the big data era, not only the computer information processing technology is required to have high accuracy, but also the security of its data processing is put forward new requirements. In addition, due to the short development time of big data technology and related theories, and its complex and diverse content, people who study relevant theoretical knowledge require higher requirements. And among the people engaged in computer work, some of them do not fully understand the deep meaning of big data, fail to keep up with the development of the times, resulting in a serious lack of talent in the computer industry is becoming increasingly prominent.

4.2. Development trend of computer information processing technology in big data era

In the era of big data, the traditional computer hardware cannot meet the needs of large-scale data at this stage, and the traditional computer hardware architecture also has some problems that need to be solved urgently. With the emergence of cloud computing has become an important channel to remedy this shortcoming. This technology has the capacity of large-scale information storage, speeds up the speed of computer data processing, and solves the problem of low efficiency. In the era of big data, the technology of computer information processing can no longer be separately created with a certain form in the implementation of data security management, but need to implement standardized management, so that the level of security protection of data information can be significantly improved.

5. Conclusions

In the era of big data, computer information processing technology is facing both severe challenges and tremendous opportunities for development. As far as computer information processing technology is concerned, in the era of big data, according to its actual needs, we should constantly improve the shortcomings of current applications, and then form a computer information processing technology that can really cater to the era of big data. In the process of computer information processing, information security is a major problem. It is of great practical significance to study computer information security technology in depth. The role of computer information processing technology in social development will become more and more important.

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