Application Analysis of Data Technology in Computer Information Security Education

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Abstract. With the development of information technology, big data technology is widely used to improve people's work efficiency. At present, computers are widely used in various industries, and information security is of great practical significance for enterprises. In order to further improve security, big data technology must be effectively applied to computer information security protection. This paper discusses the big data technology in computer information security to a certain extent. On this basis, the in-depth analysis and Research on the application of big data technology provides a reliable guarantee for computer information security, and has certain reference significance for technical personnel engaged in related business.

Keywords: Big data · Computer · Information security

1 Introduction

With the development of information technology, people's daily life has brought serious changes, and the work efficiency has been continuously improved, which has brought a lot of convenience to people's life. However, in the process of information technology application, its information security is affected by many adverse factors of flexible publicity and application of technology. As a relatively advanced processing technology, big data can improve a certain level of information security in the safe operation of computer information through effective transmission, so as to provide reliable guarantee for computer information security.

2 Application Status of Big Data Technology in Computer Information Security

2.1 Overview of Big Data Technology

The core technologies of big data technology include big data acquisition, big data preprocessing, big data storage and big data analysis. The specific processing process is shown in Fig. 1. First collect the data, then collect the original evidence, as shown in the

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figure, through data collation, data integration, data conversion and protocol operation, and then storage and data analysis to obtain high-quality data [1]. With the development of big data technology, the application of computer science is becoming more and more important. It is worth noting that the big data technology encountered difficulties in many data analysis, which is also the research direction of this paper.

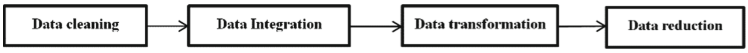

Fig. 1. Big data preprocessing

2.2 Computer Information Security in Big Data Environment

Data technology has penetrated into the industry, and the development of computer information has also brought the security of computer information. The application process of big data technology has been integrated with the needs of various industries. The impact of big data technology on computer information security is in the process of big data technology, computer information storage, information security management equipment, hacker attack, virus penetration, computer information stolen in the process of transmission and storage, so as to ensure the security of information.

3 Big Data Technology of Computer Information Security

3.1 Cloud Computing Technology

Computing technology is a typical representative of the era of big data, and also a key technology to promote the rapid development of big data technology. The flexible promotion and application of big data technology based on parallel computing method and the systematic and comprehensive sorting and statistics of relevant computer data are of great practical significance. With abundant information resources on the Internet, parallel grid computing is carried out, resources are integrated and reasonable planning and arrangement are made [2]. At present, with the development of cloud computing technology, big data technology can combine with the security requirements of computer information system, and take corresponding safeguard measures. The effective application of computing technology is a huge application of computer data processing capacity. In the process of cloud computing technology, a large amount of information needs to be stored. The continuous improvement of data storage capacity and the expansion of data information space have played a certain role in promoting the penetration of computer information security based on data technology into various fields.

3.2 Data Backup Technology

Although information technology has brought good interaction with economic life, it still challenges the information security of computer. The effective application of big data

technology can improve the level of information security and provide reliable guarantee for important information security. As an important technology of big data technology, data backup plays an important role in information security. In the process of technology application, especially in the process of introducing big data technology into enterprise information system, data backup technology can maximize the information security of enterprises and provide safe and reliable storage space for important information of enterprises. This is the age of information explosion. People are enjoying a lot of information, accompanied by the risk of privacy information leakage. For individuals or enterprises, information security has very important practical significance. Data backup technology can fundamentally solve the important data loss caused by various emergencies, reduce the probability of data loss, and ensure information security as far as possible.

3.3 Analysis of Network Security Behavior

In order to ensure that the effect of computer information security management can be expected, it is necessary to apply security evaluation mode to evaluate various network security behaviors, such as confirming whether there is intrusion in the network system. In order to achieve this goal, it is necessary to evaluate the security behavior of network packets by relying on the relevant content of matching algorithm If the evaluation results show that the behavior of intrusion features is found, it can rely on the corresponding command retrieval and identification, and group various potential or existing system security risks through matching rules [3]. When the final result shows that the current network system has been in an unsafe state.

In view of the above problems, BM algorithm can be used to evaluate the network intrusion behavior in the comprehensive grey correlation clustering method. If the evaluation results show that the characters in the network intrusion string are different from the characters in the network, the correct parameters of the network intrusion character string can be determined by this function. The specific calculation specification is:

$$\text{delta(x)} = \text{m(distance)} \tag{1}$$

$$\text{delta (x)} = \text{m} - \text{max} \tag{2}$$

In the above formula, when there is no X at the end of the detected string, formula 1 can be used, while formula 2 can be applied to other types. However, in this case, the relevant personnel also need to consider a special case, that is, large character space or short character, and the whole average displacement of delta (x) is m, The BM method can be used to evaluate the network security behavior, At present, the content of network information security assessment is very extensive, mainly focusing on the temporary network security assessment, chat favorite security assessment, comprehensive network security assessment, and this type of assessment will be further refined and classified. Therefore, for the relevant technical personnel, when studying related issues, they can extract multiple time periods of security management information, Form a comprehensive information security strategy, in this process, through file transfer package and other methods, a large number of security information is directly transmitted to the target, which can not only ensure the effect of information transmission to the greatest extent,

but also fit all kinds of security assessment system with grey correlation clustering. From the Perspective of security assessment, all kinds of security incidents are evaluated and solutions are found.

4 Big Data Application

4.1 Application of Cloud Computing Technology

Cloud computing can combine the network and cloud platform organically, build a model with the formed technology, store all information and data in the cloud, and significantly use computers to process various data information, bringing good economic benefits to enterprises. In the cloud computing process, the technical service software of the package can be transmitted through the relatively stable data transmission network of the local alkali network, and the information processing of the big data can be upgraded to the locking feedback information processing mode. In the process of using cloud computing to process the data, the whole calculation process runs through the non cyclic data flow, and the system is comprehensive [4]. On this basis, combined with the parallel computing characteristics of cloud computing, a cloud computing service model is formed through a series of groups and suggested channels for remote data transmission [5].

4.2 Application of Data Backup Technology

With the continuous development of enterprise scale, a large number of production information data will be produced in the process of production and operation [6]. This should give them enough storage space. However, there are many adverse factors in the actual data storage process, so the safe storage of data may bring great risk. Therefore, the application of data backup technology to computer information, in order to avoid the loss of important data in safe operation, can minimize the loss of enterprises. In the process of data backup and storage, in order to ensure the information security of enterprises, in the traditional process of data backup, it is necessary to carry out conventional important production, generally using U disk and mobile hard disk to store data [7]. However, with the increase of the total amount of data information, these traditional storage devices used to store data can not meet the requirements of data backup. In order to provide a broader storage space, cloud platform can have a large amount of storage space and has high security (see Fig. 2).

4.3 Application of Hado

At present, the number of data types is increasing gradually, showing a variety of development trends. For some data with special storage requirements, the traditional storage method is no longer applicable, which will bring computer information security risks [8]. Applied to the system, can meet a variety of data storage and centralized management has good advantages, the whole process of data management has systematic and effective operation to coordinate with each other, support the function equivalent to computer data security processing. At the same time, hado system is also in the stage of continuous

improvement, the function division of each component is clearer, and the application system of big data information analysis platform is more detailed and functional (see Figs. 2 and 3).

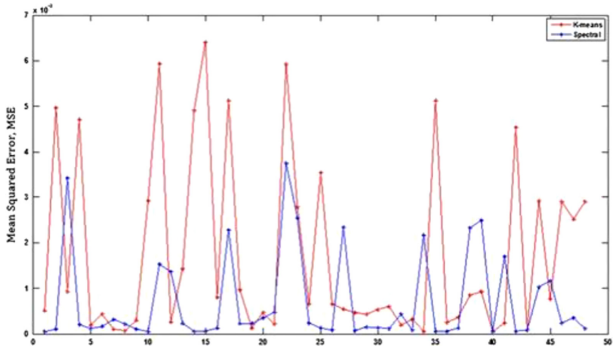

Fig. 2. Simulation of MSE for data backup

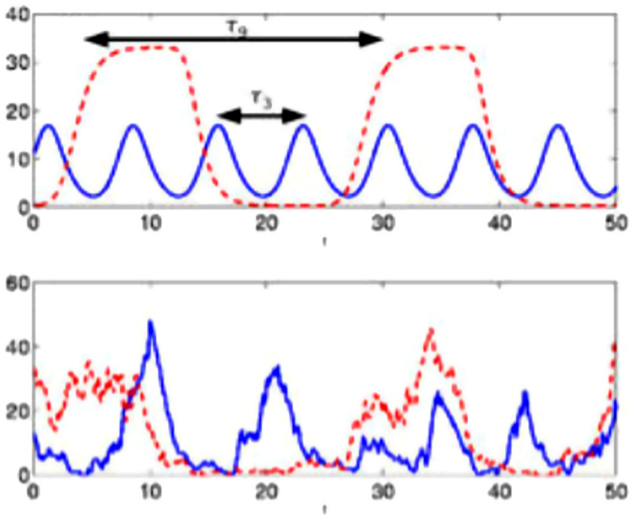

Fig. 3. Simulation for hado

5 Analysis of the Problems in the Network Security Education of College Students

5.1 The Virtual Nature of Network Alienates the Main Body of Network Security Education

With the rapid development of Internet technology, today's society has entered the era of information and digitization, "virtual" has become the most iconic feature of the network

society. As the scholar Zhang Mingcang said: "virtual in the contemporary context refers to the way of expression, composition and Transcendence of digitization". These ways enrich the network life of contemporary college students and meet their diversified network needs [9]. However, the virtuality of the network is a virtual environment created with the help of the network, which is different from the real physical environment [10]. In the virtual network space, the identity, behavior and image of college students are digitized. The daily network activities of college students are actually symbolic activities, The communication between college students has evolved into the interaction between symbols. In the virtual world, people have become slaves of symbols, which deviates from the nature of human beings. People lose themselves and become the other, resulting in the alienation of people, which is not conducive to the all-round development of people. According to Marxism, "alienation, as a social phenomenon, comes into being together with class. It is a social phenomenon in which people's material production, spiritual production and their products become alien forces and in turn dominate people". In the process of alienation, people lose their subjective initiative and are enslaved by alien material or spiritual forces, which leads to the fact that people's personality can not develop in an all-round way, can only develop one sidedly or even abnormally. "New York Times" commented: "like most people in the network society, I am deeply immersed in the media life, which is a state of excitement and fatigue. I can't distinguish between the virtual world and the real world. I feel that my personality is submerged in the vast network world, my own memory disappears in the fog of the virtual world, and I become a lifeless bystander [11].

5.2 The Openness of Network Leads to the Complex Environment of Network Security Education

In 1978, China carried out reform and opening up and took the initiative to open the door to the outside world, making today's open, inclusive, shared and innovative China [12]. Today in the 21st century, opening up has become the result of the times. As long as you have an electronic device connected to the network, no matter where you are in the world, you can share the rich information resources on the network. Marxism believes that: contradiction is the source and power of the development of things, things exist in the form of contradiction unity, in short, contradiction is the unity of opposites, so we should treat the openness of the network in two. The Internet is an open platform and a public domain. Anyone can receive and transmit information in this open area. According to the same preferences and in different time and space, Internet users all over the world rely on the Internet as a medium to freely express and freely exchange information. Due to the openness of the Internet, it is difficult to monitor the network information and resources in real time, Some individuals and organizations who have other plans have spread the bad information of violence, pornography gambling and cults, which are not in line with socialist core values. Recently, the data of the SF customers have been leaked. More than 300000000 customer data is selling two bitcoins on the dark Internet. The "dark net" has again appeared in the public's vision. In early 18, it was pushed by the official account of the public. Let the majority of young people, especially college students, know that "dark net" is a foreign website full of crime, violence and metamorphosis. Since then, "dark net" has been registered in China, which has seriously polluted the network environment

of our country, and also affected the environment of network security education, which is not conducive to the smooth development of network security education [13].

5.3 The Fragmentation of Network Information Weakens the Effectiveness of Network Security Education

"Fragmentation appeared in the relevant literature of" postmodernism "in the 1980s". Fragmentation "originally means that the complete things become broken and scattered things". Nowadays, fragmentation has been widely used in politics, education, sociology, communication and other fields. From the relevant discussion of communication, we can learn that "media fragmentation has become a new trend of mass media. Compared with newspapers, radio and other traditional media, the network is a new carrier of mass media, through the network in the form of numbers or symbols, relying on the terminal of electronic equipment to provide information resources for Internet users [14]. With the advent of the era of big data, massive information and resources provide convenience for the public, but also present a fragmented state in the communication content. As the media of information release, many traditional paper media have strict review standards, and full-time personnel carry out reasonable and legal processing based on the authenticity and reliability of information, carefully proofread, and finally summarize and bind. Different from the traditional paper media, the Internet media has not yet formed a set of perfect censorship standards for information release. In the new media era, information publishers have a wide range of discourse power. Information publishers come from different social strata and social groups, and spread information with the help of different apps. College students browse all kinds of information through microblog, wechat, post bar and forum, Due to the imperfection of the network accountability system, in order to attract attention and get hits, APP reports hot events out of context. "Through a text, a video, and a picture, it is difficult for college students to piece together a comprehensive and complete event. For the incomplete and incomplete event, college students express their views actively combined with what they have learned, and the conclusions also present a fragmented state. Fragmented, good and bad information flooding the network, polluting the network environment, threatening network security. In the long run, college students are used to the fragmented way of information acquisition, which will have an impact on the comprehensive and systematic network security education classroom to a certain extent, weaken the leading role of the network security education classroom, and is not conducive to the construction of a complete network security knowledge system, the cultivation of logical thinking and divergent thinking of college students, and increase the difficulty of network security education, As a result, network security education is difficult to achieve the desired effect [15].

6 There is a Contradiction Between the Diversity of College Students' Network Needs and the Singleness of Network Security Education

With the deepening of reform and opening up, the continuous improvement of market economy and the continuous improvement of China's productivity, China's main contradictions are also changing with the times and the situation. The 19th National Congress

of the Communist Party of China has a new discussion on the main contradiction of our country: "the contradiction between the growing needs of the people for a better life and the unbalanced and inadequate development". today, the needs of a better life are more focused on the needs of a better spiritual life. The important way for contemporary college students to enrich their spiritual life is to rely on the Internet, The Internet meets the diverse network needs of college students in a subtle way, but the network world is complex, and college students are not deeply involved in the world. At this time, colleges and universities need to carry out a variety of network security education, provide positive spiritual resources for enriching college students' spiritual life, and build a rich and colorful spiritual world for college students. However, the current situation of network security education in Colleges and universities can not effectively meet the needs of college students, there are contradictions and deviations [16].

After the heavy schoolwork burden of high school and the baptism of the silent war of college entrance examination, we have entered the ivory tower of our dreams. The education mode of "strict in and broad out" has left enough free time for college students. Different from the high school step-by-step, busy life, university life is more idle and empty, idle. With the advent of the Internet age and the popularity of electronic devices, college students have found the carrier of emotional attachment. The post-95 college students are the aborigines of the Internet world. For them, the Internet is not only the existence of tools, but also a way of life. College students are the pillars of our country. At the same time, they are also at the forefront of the society in the operation of the network. While meeting the diversified needs of college students, the network is constantly occupying the world of college students. The network has become a new carrier of contemporary college students' lifestyle. Through the network platform, college students can carry out digital symbolic social activities such as online shopping, online games, online love, online chat, etc., With the continuous improvement of living standards and the degree of network socialization, the network needs of college students are not limited to entertainment and social communication. College students are fundamentally "born for learning" groups, and education is also an important part of college life. However, the network security education in Colleges and universities is not flexible and sufficient, and the supply of unsystematic resources is difficult to meet the network needs of college students. As an important way to meet the network needs of college students, network security education in Colleges and universities should carry out information supply side reform to meet the network needs of college students in an all-round and wide range. However, in reality, we find that the supply of network security education resources is not flexible, sufficient and systematic.

7 Conclusion

In short, with the continuous development of information technology, people's daily life has brought new changes, improved work efficiency and brought many conveniences to life. However, the complexity of the network environment has a negative impact on the information security of computers and the application of information technology. Therefore, we should effectively use various computer security technologies to ensure the security of big data.

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