Research on the Security of the Application of Computer Technology and Electronic Information Engineering Technology

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Abstract. The technology in the security research of computer technology and electronic information engineering technology has effectively solved the security problem through the application of the optimized concept pulse workstation. Other solutions for electronic information security cannot effectively solve the interpolation problem. The successful development of security research on computer technology and electronic information engineering technology will result in a large number of vulnerable security issues. The combined application of computer and electronic information technology will ensure security.

Keywords: Computer Electronic Information Engineering Technology, Application, Security

1. Introduction
With the rapid development of information technology, along with the continuous updating of technology[1-3], electronic information engineering technology has also made a qualitative leap. Auxiliary computers and electronic information also play an important role in management and control[4-6]. The development of the Internet has made electronic information technology widely used. However, we should pay enough attention to the problems existing in information technology and solve them accordingly. Then, this article also proposes corresponding research and analysis on its safety and application level.

2. The reason why computer electronic information engineering technology must be widely used
2.1. Effectively improve the management level and economic benefits of enterprises
In the process of modern development of enterprises, the rational use of computer electronic information engineering technology can optimize various engineering design schemes, improve design quality, control design costs, significantly improve the management ability and management quality of enterprises, so that enterprises can achieve the maximum economic benefits while ensuring the quality of engineering design, and help enterprises obtain unique competition in the market. Striving for advantages effectively improves the social image of engineering enterprises and strengthens the comprehensive strength of engineering enterprises.
2.2. The current situation of the application of computer electronic information engineering technology in China

At present, some cities and regions in China are limited by the backward economic level, and the local construction and development speed is slow. At the same time, it is difficult for the computer electronic information engineering technology to really combine with the urban economic construction, and can not play a role in promoting each other. This also has something to do with whether the senior managers of enterprises attach importance to the computer electronic information engineering technology. Therefore, it is necessary to cultivate the application awareness and practical application ability of computer electronic information engineering technology of enterprise management, so as to integrate electronic information engineering technology into various work, and play a practical role in improving the economic benefits of cities and enterprises.

2.3. Promoting the development of computer information technology

The development of science and technology makes the social trend become more information-based, more modern, more intelligent and more digital. In this context, computer electronic information engineering technology plays a positive role in the progress of computer information technology. Through the improvement and promotion of computer electronic information engineering technology in practical application, at the front end of technology, so as to improve our computer information technology ability faster and better.

3. Application fields of computer electronic information engineering technology

3.1. Electronic communication engineering

In computer electronic information engineering, there is a key link called information processing. Generally speaking, electronic information engineering needs to deal with a lot of information, at the same time, it also has higher requirements for the timeliness and accuracy of information. Because the computer system is connected with electronic information engineering, the change of computer system will also affect the quality of electronic information engineering. The complexity of computer system itself and uncontrollable external network attack will affect the security of information processing in electronic information engineering. It is necessary to protect the information processing of electronic information engineering through computer security technology, such as computer key technology, anti-jamming firewall technology, etc. It should be noted that the computer security can only be improved, can not be completely eliminated.

If the input value of the network is not equal to the expected output value, the output error will appear $E$:

$$E = \frac{1}{2} (d - O)^2 = \frac{1}{2} \sum_{i=1}^{k} (d_i - o_i)^2$$

(1)

After extending the above expression to the hidden layer, the following expression can be obtained:

$$E = \frac{1}{2} \sum_{k=1}^{l} \left[ d_k - f \left( \sum_{j=0}^{m} w_{kj} y_j \right) \right]^2$$

(2)

After extending the above expression to the output layer, the following expression can be obtained:

$$E = \frac{1}{2} \sum_{k=1}^{l} \left[ d_k - f \left( \sum_{j=0}^{n} w_{kj} y_j f \left( \sum_{i=0}^{m} v_{ij} x_i \right) \right) \right]^2$$

(3)

It can be seen from the above expression that the network input error is a function related to the
weight and weight of each layer. Thus, it can be seen that to change the value of the error, it is necessary to adjust the weight. Obviously, the purpose of adjusting the weights is to keep the error decreasing.

3.2. Equipment development

(1) Application of computer electronic information engineering technology to communication trunk line. As an important part of the user's enterprise network interface and access line, electronic information engineering is located behind the WAN communication trunk line. In the process of practical application, the relevant technical personnel should clearly distinguish the special line from the public line and pay attention to the corresponding protection.

(2) It is widely used in most scientific research institutions, government units and university media. It can be said that the most important representative of the international information highway at this stage is the computer network technology.

(3) The hypertext files on the Internet are read through HTTP hypertext transmission protocol, that is to say, through the corresponding computer network technology, each workstation user in the enterprise internal network can query and obtain the required information on the network more efficiently, which greatly improves the use value of the browser.

3.3. Resource sharing

With the computer network cloud technology, the resource sharing development function in electronic information engineering has been more incisively and vividly played. Through the cloud technology, a large number of data and information are stored in the virtual space. Network users only need to log in legally, they can extract, transfer and share information at high speed.

4. Security countermeasures of computer electronic information engineering security technology

4.1. Set computer firewall

At present, a kind of computer network security technology widely used in China is called computer firewall security technology. The essence of this technology is to set up a barrier between the Internet and the computer network. Because there is a technical barrier between the valuable data that needs to be protected and the network connection, the internal data can not be directly transmitted to the external network. The virus data or website can not invade the internal of the computer, and the computer can still work normally. Through the computer electronic information security technology, the whole system can be connected in the WAN. At this time, no matter the enterprise or the individual can use the data in their own local area network. This mode can improve the security and efficiency of data information circulation.

4.2. Encrypt information

The essence of information encryption technology is to re-edit the computer data through special algorithms, and hide the information that needs to be protected, so as to avoid the information being illegally stolen, changed or even destroyed. Only the user has the authority to control the information. Scientific and reasonable use of computer data encryption technology, can enhance the protection of data, improve the security of data, on the other hand, it can also avoid the risk of easy leakage in data transmission and reduce the occurrence of unsafe problems. At present, information encryption technology has become the main control way of computer network security. Different encryption technology can be divided into transmission encryption, storage encryption, integrity encryption and other technologies. Among them, the transmission encryption technology is mainly to protect the security of data in the transmission process, through a specific algorithm to encrypt the data, only the decryption algorithm can decrypt the encrypted data, transmission encryption technology is the most important way of data transmission security protection; data storage encryption mainly protects the
security of data in the storage process, whether it is the data book. Both the body and stored procedures are encrypted to further improve the security of data; integrity encryption refers to the protection of data by verifying the integrity of information processing and transmission content, and the use of signature code to realize encryption confirmation. When the user's operation meets the preset parameters, the protected data can be called and read.

4.3. User authentication

The way of computer identity authentication refers to the implementation of real name authentication on the computer network. When users access and operate the computer, the identity of the operator is verified to confirm that it is safe for the user to log in to the protected computer network. In addition, once a malicious virus invades the computer network, it can determine the login IP in the process of virus investigation, effectively reduce the scope of investigation, and find out the people who damage the computer network security through the information provided during the investigation and authentication login, so as to improve the security of using computer network.

4.4. Intrusion control and detection

Intrusion detection is a more widely used computer network security technology, mainly in the process of identifying the computer user behavior operation, the system administrator reports the abnormal situation or phenomenon in the computer, and timely reminds and limits the behavior beyond the authorization. Due to the large error of single intrusion detection, in the actual intrusion control, we can combine the artificial mixed detection method, and build a set of scientific, reasonable and complete detection system to improve the accuracy of intrusion detection, so as to ensure the security of computer network data.

5. Experiment and result analysis

The security of data information is very important for any industry and any enterprise. Therefore, in order to make the most of the effective application of computer electronic information engineering technology, enterprises need to improve the corresponding knowledge level and professional skills of enterprise staff, and make the staff more scientific and standardized application of computer network technology through professional training and assessment, Better ensure data security. It is one of the important factors to cultivate the competitiveness of an enterprise to cultivate the technical talents within the enterprise and recruit the technical talents from the society at the same time, such as recruiting young talents with strong knowledge reserve through universities, recruiting mature technical personnel with rich practical experience through headhunting recommendation and network, and establishing a high-level technical talent team in line with enterprise culture. In addition, it is necessary to strengthen the information security awareness of users of electronic information engineering technology.

In order to verify the method, Matlab is selected as the simulation environment for experimental research. In this study, the network is initialized and the whole system is processed by trainlm function. The target value is set to 0.02, and after three steps of computer simulation analysis, the final computer simulation analysis result is 0.00105258, thus the error rate is locked to the predetermined error requirements. For the specific effect of error rate, please refer to figure 1.
In order to further test the network performance after computer simulation analysis, in this study, the results of computer simulation analysis are taken as the research object, and further simulation analysis is made. Non computer simulation analysis is carried out by using postreg function to obtain a more approximate effect. When the fitting degree $r = 0.998$, the analysis results are shown in Figure 2.

![Figure 1. Computer network error rate.](image1)

![Figure 2. Non computer simulation of computer network security architecture](image2)

In this paper, the computer simulation analysis is carried out by using the simulation output vector and its target vector, and the correlation coefficient is used as the analysis mark. When the network performance reaches the optimal state, the intercept value is 1, the slope value is 2, and the fitting degree value is 2.

6. Conclusion

The application of computer and electronic information engineering technology poses many problems for information security and application, and provides a broader space for the application of electronic information engineering technology.

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