

Research on the Role of Artificial Intelligence in Computer Network Technology in the Era of Big Data

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Abstract: This article is mainly to big data era the role of artificial intelligence in computer network technology research as the key point is expounded, combined with the present era of big data, the application of the computer network technology as the basis, first of all, the basis of analyzing the artificial intelligence era of big data overview, secondly introduces background of artificial intelligence in computer network technology, and finally from the intrusion detection technology, intelligent firewall technology level, the junk mail system level, system evaluation and network management level, management level further instructions from several aspects, and artificial intelligence in the era of big data is discussed in this paper the role of computer network technology, Highlighting the role of artificial intelligence in improving the efficiency of computer network operation is intended to provide references for relevant research.

Now in the rapid development of network technology, people for the demand of the network society in increasing, information transmission speed of expansion caused problems, artificial intelligence concept can be tricky to break through a problem, the rest of the advanced network technology and communication technology, not only can ensure the effectiveness of information processing and processing, can also manufacture finding vulnerabilities associated with computer network, provide the conditions for use by the science of computer network technology support. In order to better demonstrate the utility of computer network technology in the era of big data, we should base on the role of artificial intelligence and comprehensively improve the development efficiency of computer network technology.

I. Basic overview of artificial intelligence in the era of big data

(1) The connotation of big data era. The so-called big data era is a kind of information set with relatively large quantity and type, and timely processing of database. The era of big data has several characteristics: first, there are various types of information, which are diversified through the combination of various forms of information sources. At the same time, the richness of modern information sources promotes the substantial expansion of information [1]. Secondly, the information scale is large. Under the background of the era of big data, the information capacity that can be melted is often extremely expensive with 10TB. The third is the authenticity of information transmission, information transmission and processing speed are significantly increased, highlighting the security of the computer system; Finally, the large scale of big data, in order to adapt to the actual needs of social production, continuously strengthen the level of data processing.

(2) The connotation of artificial intelligence. Artificial intelligence mainly simulates the human thinking mode with the help of the virtual technology of computer existence, including rich contents, which are related to computer science and psychology, showing strong intelligence. The ultimate goal of artificial intelligence production is to make the computer replace people to participate in tedious work, save a certain amount of time, to improve people's work efficiency. Artificial intelligence analysis is more extensive, including automated programming and intelligent management and control, which have become the rapid development of artificial intelligence factors.

At the same time, the basic characteristics of artificial intelligence include several aspects. First, artificial intelligence can deal with problems encountered by computer network at the root,

especially the identification of specific models. The emergence of artificial intelligence can more comprehensively manage computer network data, so that the high efficiency of network use can be supported by conditions [2]. Secondly, artificial intelligence can absorb novel knowledge, reason and screen information data with little difficulty, and obtain higher level of information, which can greatly reduce the time of network search, and help realize the instantaneity of network management and increase the speed of network use. Thirdly, artificial intelligence has nonlinear processing ability. There are a lot of information data in the network, and some data and concepts are often low-level. However, there is some information behind these data. To mine valuable information, we should study low-level data and understand the meaning and concept of high-level information. In other words, artificial intelligence technology plays a certain role in information interpretation and concept selection. The non-linear ability involved in artificial intelligence can deal with the information problem of computer network, thus strengthening the integration of data information [3]. Finally, with low cost and less resources, artificial intelligence selects the control algorithm in the process of operation. This algorithm runs quickly, and the optimal solution can be used for one-time calculation, which can save a large number of computing resources and highlight the high-speed characteristics of network technology.

2. Artificial intelligence exists in the background of computer network technology

While computer brings people convenient living conditions, there are some problems, especially the security of information data. In addition to the extension of the scope of computer network technology, people strictly require the network security operation, to ensure the security of information data. The most important function of network management structure is to control and monitor. The previous computer network technology can only calculate the data results, but it weakens the accuracy of information. Crime is on the increase in the world at the present stage, the user to obtain information on the real data, to improve the computer network system to react, is about artificial intelligence system [4], intelligent control structure can be automated and judging the computer failure, understand the performance of the computer itself, for the user's information data security protection. Moreover, from the perspective of the improvement of computer information, the introduction of artificial intelligence system is essential. If there is unclear information, the application of this technology can quickly process and dynamically track relevant data, which is conducive to the normative operation of computer network.

3. The role of artificial intelligence in computer network technology in the era of big data

(I) intrusion detection technology. With the aid of artificial intelligence intrusion detection, the detection performance of computer network is strengthened. For the computer network management program, intrusion detection technology is not only the key factor of computer security and stability management, but also the core of the formation of advanced firewall technology. The intrusion detection technology involved in artificial intelligence plays a role in the computer network technology, which can enhance the network detection performance, guarantee the network information security, and make the data in the network structure complete and reliable. At present, the intrusion detection technology of artificial intelligence is used in the computer network to process network information in combination with the corresponding types. At the same time, the unstable information in the computer network is optimized, and the authentic network information is fed back to users to reflect information security. In addition, the application of intrusion detection technology can also stabilize the comprehensive performance of the computer network [5], and provide network protection conditions, so as to prevent the internal and external environment of the computer network from being threatened, such as expert system and artificial neural system, etc., which will give full play to the performance of the intrusion detection technology. And artificial neural system also is associated with the body's own immune system, through the computer display process, including gene pool, negative selection and clonal selection, etc., within the gene pool, and relevant personnel to try different gene combinations, or mutation analysis after the state of genetic

information, identification of multiple virus invasion system, the result is a gene pool for the construction of the ability to push; In the process of negative selection, the characters that can match are deleted, and the qualified test is obtained under the condition of correct selection. After that, a series of processes are carried out. At present, the processing of artificial immunity is in the perfect stage.

(2) Intelligent firewall technology. In computer network technology, artificial intelligence can enhance the protection performance of computer network. In general, the safety of computer network is used, should be based on the construction of the firewall, because the function of the firewall is in the computer operation state, the interception of the risk factors involved in the computer and network system, control of these factors into the computer the whole system, and maintain the use of computer network in the security environment. Artificial intelligence system exists in the intelligent firewall technology, which makes the computer network to form the function of automatic prevention, at the same time to cooperate with the computer network to deal with other types of software encountered by the operation of the problem, efficiently deal with the virus in the computer network. The use of intelligent firewall technology, also promote the effective development of internet-related enterprises, the human work and life to maintain a smooth state.

(3) Anti-spam mailbox system level. Artificial intelligence is used to enhance the garbage cleaning performance of computer network. In daily life, when people use computer mailbox, there will always be garbage files, which are related to advertisements in most cases and affect the effective use of mailbox to a certain extent [6]. However, during the use of a specific mailbox, garbage files will be generated continuously. Therefore, the manual method is difficult and the operation is relatively tedious. The anti-spam mailbox module in the artificial intelligence system has the automatic information defense function to intercept the junk files in the computer network, so as to save people's time and energy to manually delete the junk files, and improve the quality of the use of the computer mailbox.

(4) System evaluation and network management. Under the background of big data era, the concept of artificial intelligence is bound to be introduced in the intelligent management of computer network technology. It not only plays a role in the management of the computer network, but also according to the situation of the computer internal expert information database to set up the management structure, complete the computer network technology efficient management control. Because the network has a certain dynamic and transient change, the relevant personnel use the evaluation and network management module in the artificial intelligence system to strengthen the management level of the computer network. The expert system is an important part of it. It integrates the research experience of professional scholars into the computer structure and processes the relevant information and data, which reflects the value of artificial intelligence. Another role on computer network, artificial intelligence to the connotation of the data mining, data mining is focused on the mechanism of network and host dialogue information, at the same time to all-round description, through data mining content records the original information in the computer system, if the host environment disturbance, can and compare information, quickly identify the problem and avoid the use of computer network risk, strengthen the operational efficiency of the computer network.

(5) Agency management. The introduction of artificial intelligence concept is convenient to strengthen the quality of computer network service. The Agent management module in the artificial intelligence system, in other words, the Agent technology, is essentially materialized [7]. Through the technical knowledge of each Agent as a reference, it supervises the processing of information and data to ensure that the task of computer network operation is completed within a limited time. Generally speaking, the agent management module in the artificial intelligence system can search the corresponding information after the completion of the user's automation work, and then transfer the acquired information to a special location to further provide humanized services to the majority of users. For example, in the process of searching information through computer network technology, the agent management module can be used to search and complete the collection of demand information. Moreover, the agent management module can play a role in people's study and

work, including the setting of meeting time and mail receiving and sending, as well as network shopping, etc., to enhance the comprehensive service quality of computer network.

Conclusion

To sum up, the era of big data in the computer network technology applied artificial intelligence show great significance and value, the computer deep in people's work and life, play a unique advantage, is in big data era background, the artificial intelligence system for computer network operation efficient safeguard, so managers should fully introduce artificial intelligence concept, enhance the stability and security of the computer network, to ensure the operation and development of the enterprise can be continued.

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