Research Progress and Application Analysis of Computer Artificial Intelligence Technology

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Abstract: Combining with theoretical practice, this paper first analyzes the development process of computer artificial intelligence technology, then analyzes the existing problems, and finally proposes the specific application of computer artificial intelligence technology. It is hope that this paper can provide enlightenment and help to the research and application in related fields.

1. Introduction

Computer artificial intelligence technology is the main content of global research. Since the middle of last century, many experts and scholars began to study computer artificial intelligence technology. Up to now, it is still the main subject of many countries' research, and has achieved gratifying results. It has made important contributions to the progress of global science and technology and the development of various fields. However, the research on this aspect in China is not deep enough. Therefore, based on theoretical practice, this paper makes the following analysis on the research progress and application of computer artificial intelligence technology.

2. The development course of computer artificial intelligence technology

2.1 Emergence stages.

In the middle of last century, relevant experts and scholars put forward the applied concept of computer artificial intelligence technology. Up to now, countless scholars have invested a lot of energy and time in the research and application of this technology and achieved good results. In the 1950s and 1960s, the goal of computer artificial intelligence technology research was mainly embodied in machine theorem proving and LISP table processing language programming. It needs the support of various subjects such as computer science, artificial intelligence, bionics and mechanical principle science to bring into play the value and function of application. However, if other technologies fail to keep pace with development, or the reasoning ability of relevant solutions is insufficient, the role and value of computer artificial intelligence technology will be affected.

2.2 Climax phases.

In the 1960s, computer artificial intelligence technology fell into a period of underdevelopment. The main reason is that the development of other technologies is difficult to keep up with the development demand of artificial intelligence technology. However, at this time, experts and scholars in the field of computer artificial intelligence technology did not stop their research, and actively innovated various technologies to meet the actual demand. By the mid-1970s, through the joint efforts of various experts and scholars, a set of artificial intelligence expert system was successfully researched and processed. The invention and application of this system pushed the research work of computer artificial intelligence technology into a new field and laid a solid foundation for the development of this technology in the later stage.

2.3 Evolution periods.

By the 1980s, the fifth generation computer was invented, which providing technical assistance for the application of computer artificial intelligence technology. It began to be widely used in various fields and achieved good development results. The research results at this stage show that the development of computer artificial intelligence technology must use computer technology to better apply and realize [1].

2.4 New development stages.

Up to now, with the rapid development of global information technology, big data have brought extremely convenient support to people's production and life. In such a context, how to extract effective information and data from massive databases and make use of them is the principal factor for the enterprises to stand out in the fierce market competition at present.

How to make a computer to provide more convenient services for people and realize humanized services and management is the main content of current computer research and the key to leading others in the information age. Especially the intelligent retrieval technology of information has become the main subject in the field of computer artificial intelligence. If these problems can be well solved, it will become a major breakthrough for the better application of computer artificial intelligence technology in various fields of society. Thus urges the computer artificial intelligence technology to move toward the higher direction development, makes the important contribution for the social economy development.

3. Problems existing in the development of computer artificial intelligence technology in China at present

As far as the contemporary development of computers in China is concerned, computers are widely used in various fields and their range of application is constantly increasing. The application and popularization of computer breaks the limitations of traditional space and time, and provides very convenient services for people to communicate, share information, talk about the business, study and entertainment. On this basis, people pay more and more attention to the security of network information. When computer network technology is applied, more attention is paid to network monitoring and control, which play a very important role in more timely and rapid information acquisition and processing [2]. Through computer network technology, we can realize the timely transmission of video, voice, picture, text and other information. However, it is less normative and lacks continuity. In the early days, computers could only analyze and process data logically, but they could not effectively judge the authenticity of all data.

In the specific application process, in order to improve the authenticity of data processing to the maximum extent, it is necessary in order to do a good job of information search, laying a solid foundation for the realization of intelligent computer network technology. At present, the computer application is very fast, and the user information security city can provide the basic guarantee for the computer security network. However, the number of cybercrimes is increasing, but the difficulty of software development is significantly reduced if the computer cannot find the problem quickly or lacks the ability to react quickly, it will be difficult to fundamentally suppress the occurrence of network crimes, and it will be difficult to improve the security of network management [3]. It can be seen that to give full play to the role of computer artificial intelligence technology. Efforts must be made to build a sound management system in order to improve the intelligence and reaction speed of computer applications. At the same time, we should do a good job of automatic data search and fault detection, and through effective measures to ensure that computer artificial intelligence technology can be applied in practice.

4. Application strategy of computer artificial intelligence technology

4.1 Realize remote autonomous planning and remote automatic control.

A large number of application examples show that scientific and reasonable application of computer artificial intelligence technology can effectively realize remote planning, effectively break the space and time constraints on the earth, and at the same time achieve the control and management of outer space aircraft. For example, the US National Aeronautics and Space Administration (NASA) controls and adjusts the spacecraft comprehensively through computer artificial intelligence (AI) technology, and is the only country in the world where computer AI technology is used for remote control and management. The specific execution system is shown in figure 1:
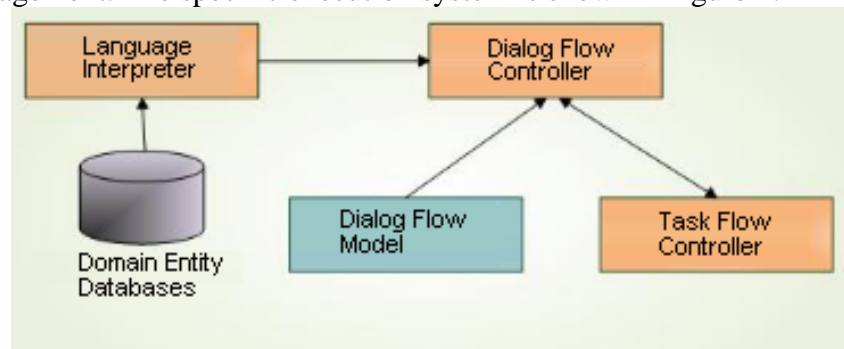

Figure 1 Implementation of remote automatic control of the execution system

By connecting the ground system and the intelligent remote program through the Internet of things technology, the objectives can be clearly managed and autonomous planning can be carried out to realize the round-the-clock dynamic monitoring of the spacecraft in outer space. In this way, technical guarantee can be provided for the good operation of the ground extension console, so as to grasp the actual operational state and operation parameters of the spacecraft in real time. At the same time, computer artificial intelligence technology can also find faults and differences in the program in a timely manner, and guide operation and maintenance personnel to adjust in a timely manner, so as to guarantee the safe operation of the spacecraft and provide reference basis for ground researchers.

4.2 Identify autonomous vehicle control objectives.

Research shows that computer artificial intelligence technology has a very serious impact on the visual system. The reasonable application of this technology can ensure the stable operation of the car along the designed lane. As far as the application effect is concerned, developed countries, such as the United States, Germany and Japan, have integrated computer artificial intelligence technology into micro vehicles, which can realize autonomous navigation of vehicles, and the navigation distance has exceeded 2000 highways. In this control system, most of them are clearly understood by computer artificial intelligence technology. By controlling cars to find road exits, computer artificial intelligence technology can be improved. Moreover, it can accumulate more experience for the perfection of artificial intelligence control system, provide data support for the car to choose the best driving direction, so as to realize scientific and reasonable control, which is also the main development direction of unmanned vehicle at present, and has a very wide application prospect.

4.3 Effective communications and communication.

Currently, in terms of the development status of computer artificial intelligence technology in China, intelligent AGENT is the most important, that is, any entity that uses sensors to perceive the environment and uses the effectors to act on the environment. If we can apply the intelligent AGENT into the working system of the robot, it can effectively identify the human emotional state. It cannot only effectively realize the effective communication and communication with human, but also replace human to do the current work that human cannot do. The application of computer artificial

intelligence technology can also realize regular communication between human and robot, and improve various dangerous and difficult jobs through man-machine interaction. At present, the computer has been widely used in various fields, and in the specific application process, it will also involve philosophical and psychological content, which can maximize the potential of human beings, thus creating greater value and role. In a word, the application of computer artificial intelligence technology cannot only provide support for various fields, but also change the living mode of human beings and promote human beings to move forward continuously in a higher direction [4].

4.4 Predictive step applications of chess game.

Go is under a very long history. Strong predictive ability is needed in order to effectively grasp the form of opponent layout, and then take corresponding methods for confrontation. The application of computer artificial intelligence technology to go can comprehensively collect relevant data and make accurate data analysis, so as to fight against it. For example, in February 2016, computer artificial intelligence and a well-known Go player won the competition with a score of 4:1. In Weiqi, deep learning algorithm is mainly applied in the process of giving attention to the prediction of matches, so as to endow artificial intelligence with sufficient data analysis ability, which can effectively predict the next steps of opponents and find countermeasures in time. At the same time, computer artificial intelligence will not be affected by external factors, under the specific algorithm steps, can have steps and planned operations. Moreover, it can also be widely used in various fields of production and life, gradually promoting the development of human towards intellectualization.

4.5 Ensure the security of computer application.

With the rapid development of computer information technology, it has been widely used in various fields. In the specific application process, in order to effectively improve the effectiveness and efficiency of network monitoring, it is necessary to make prompt response and treatment to the accidents that may occur in the operation of the computer. However, data and information transmission in a computer network are not continuous. It is sometimes difficult to find abnormal data quickly only by means of information logic processing method, and the accuracy is not high enough. Computer artificial intelligence technology can effectively solve this problem and extract effective information from massive data information, thus accelerating the processing speed of these problems [5]. Through comprehensive network management, the effect of the security problem can be improved greatly. At the same time, the computer artificial intelligence technology can also perform the relevant contents in the intelligent management work system, and then the anomalous information in the network operation can be found through the automatic reading of data. In this way, the problem of network delay can be solved and restored quickly, which provides the basic guarantee for the safe and stable operation of the computer network.

5. Summary

To sum up, this paper combines the theoretical practice to deeply analyze the research progress and application of computer artificial intelligence technology. The analysis results show that the computer artificial intelligence technology has improved to a new height and provided technical support for the development of many modern industries. As far as the current application status is concerned, the application effect based on computer artificial intelligence technology is increasingly obvious, which can enable people to better understand the charm of modern science and technology. Meanwhile, in recent years, the expert decision-making system based on computer artificial intelligence technology has been increasingly improved, laying a solid foundation for the application and development of computer artificial intelligence technology.

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