

Study on the Application of Artificial Intelligence in Computer Network Technology

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Abstract: Artificial intelligence, one vertical field of computer science and technology, on the basis that information makes computer network technology get wide application, upgrades and optimizes computer network technology. The application of artificial intelligence in computer network technology has ushered in the leapfrog development of computer network technology and provided a suitable environment for the incubation and cultivation of artificial intelligence. In this paper, it studies and analyzes the application of artificial intelligence in computer network.

1. Introduction

In the process of rapid popularization and upgrading of computer network technology, in order to break the barriers of traditional technology and meet the increasingly high demand of social environment, artificial intelligence technology with efficient processing capacity and learning ability gets the favor of the industry. Many social activities today are closely related to computer network technology. The outstanding characteristics of artificial intelligence, such as high efficiency and low labor cost, are also the rigid demand of the society. These technologies are promoting the development of human society. The application research of artificial intelligence in computer network technology is not only for the development of computer network, but also for the development of human society to explore more possibilities.

2. Status Quo of Computer Network and Artificial Intelligence

Artificial intelligence technology depends on computer technology and the development direction of computer science technology determines the future development of artificial intelligence, furthermore, the continuous development of artificial intelligence can also promote the continuous development and improvement of computer network technology¹. Both computer network and artificial intelligence belong to the branch of computer science, but they have different development status. The combination of the two can solve the problems existing in the technology itself to some extent.

2.1 Status Quo of Computer Network

Nowadays, the hardware equipment of computer network is highly popular and its access threshold is low, so almost everyone can participate in the activities of computer network. Faced with such a huge amount of information, artificial supervision is as difficult as ants shaking a tree, which result in that all kinds of unfiltered information spread on the Internet, and a lot of comments that have negative impact on society also breed on the Internet. Although the current network supervision has achieved obvious results, it is not possible to distinguish all the information one by one. In some corner of the network, there are still some not allowed information in the air.

In terms of network security, computer viruses have been a headache for the industry. General virus protection software can only prevent the existing virus in virus library, but for some disguised, or newly developed virus, it doesn't work. For enterprises, computer viruses cause computer equipment damage and information leakage, which will be a serious economic loss.

Although the computer network has been widely used in big streets and small alleys, most people's ability in using computers is very low, and they do not know how to protect their own

information and do the equipment maintenance, so they often passively accept the advertising information. For them, the use of network equipment is a burden, coupled with the panic caused by the computer virus, as a result, some people have to give up the convenience of computer network.

Solving network security problems and providing more high-quality network services are the prerequisites for the further development of computer networks. Artificial intelligence is an effective means to solve these problems. Artificial intelligence technology improves the intelligence degree of computer network and conforms to the development direction of information technology.

2.2 Status Quo of Artificial Intelligence

At present, the main task of artificial intelligence is to communicate between the computer and the outside world, and make it have a preliminary thinking model through the imitation and learning characteristics of artificial intelligence. These technologies have been used in some industries in the trial stage. On the one hand, it is the technical problem; on the other hand, the society has not developed to fully support artificial intelligence. As for the application of artificial intelligence, there are still many opposite voices in the society. However, artificial intelligence is an inevitable stage in the development of computer science, and these opposite voices just provide reference for the development of artificial intelligence.

The idea of artificial intelligence has been put forward in the early stage of the information revolution, and the Learning algorithm, one of its core algorithms, has been available for several decades, however, it had not been supported by a good network environment during the past years. Until now, artificial intelligence has started entering the public's vision. In recent years, China's artificial intelligence has made great progress, several large domestic Internet companies have successively landed in the field of artificial intelligence, and made a lot of research achievements in this field. However, compared with some developed countries, there is still a long way for China's development of artificial intelligence to go.

Although artificial intelligence has been widely used in all walks of life and its technology has become more and more mature, we should not only be satisfied with the current progress of artificial intelligence, but objectively know the problems and challenges it will meet in the future²⁻³. Artificial intelligence is not just a technical direction in the field of computer science, it also includes knowledge of other disciplines. The integration of artificial intelligence with some industries is only at the trial stage and in addition to the technical difficulties and social obstacles, there is still a long way to go to popularize artificial intelligence.

3. Study on the Application of Artificial Intelligence in Computer Network Technology

3.1 Network Safety

Worm. WhBoy. cw

In recent years, there is few outbreaks of computer viruses on the scale of the Worm.WhBoy.cw, but news of information leaks and server hijackings often occur in our lives. Ensuring network security requires the support of Internet technology and the improvement of relevant laws and regulations. In the technical aspect, the traditional network firewall can only identify the virus contained in its own database, lack of flexibility, just like the biological virus, whose body needs to carry some kind of virus antibody in order to eliminate the virus. However, the form of viruses is diverse, every new computer virus can easily invade the firewall, which is a great challenge for the traditional network firewall.

Artificial intelligence, using its own characteristics of intelligence and flexibility, can effectively recognize and deal with the known or unfamiliar viruses, greatly improving the ability of firewall interception.

3.2 Network Management

With the development of computer network, more and more information can be contained in the network. However, the network has dynamic properties and certain instability, which makes

network management more difficult and generates great pressure in the face of network fluctuation. Therefore, the network management is generally assisted by artificial intelligence tools, which greatly reduces the difficulty of management, and the high-speed computing speed can also meet the real-time requirements of the network.

3.3 Network Design

The creative industry itself is one work with creativity, thinking feature and cultural-humanity color, which is different from the complex and repetitive pipelined work. Creative work cannot be done by computers on their own, but today's artificial intelligence can already do some simple creative work, for example: input the key elements needed for one novel, and a complete novel can be got by the artificial intelligence; Input the page content and the typesetting and beautification can be finished automatically. Using the artificial intelligence tools, people just need to think about the content of work, do not need to spend too much time in operating therefore, much more time can be squeezed out to think, finally improve the efficiency of output.

However, the shortcoming of this design work is that the upper limit of output is constant and the quality is average.

3.4 Spam Intercept

In the era of information explosion, various kinds of information filled the network, represented by various advertisement spam, which was hated by users. In this aspect, artificial intelligence can improve users' Internet participation experience. For individual users, artificial intelligence can identify most of the advertisement spam flexibly and intercept it. For AD merchants, artificial intelligence can accurately push advertisement to the network devices of users in need by identifying the attributes of users on the network. In that way, it can reduce the trouble caused by the spam on the network to users. However, due to the immature technology, as well as the diversity and variability of the environment, the current situation has not been well improved.

3.5 User Model

Each participant in a computer network is an individual, so in some large-scale computer network activities, it is not possible to take one-to-one individual network interaction for each participant or take the same network interaction with all participants, in which case, artificial intelligence builds user models with different attributes for participants according to their interaction needs, in addition, assigns the newly added participant model, and during the process, the accuracy of the model will be corrected for many times, which is equivalent to make intelligent grouping of participants. The initiator of this network activity can complete the network activity accurately and in batches through individual interaction with each group.

3.6 Expert Knowledge Database

Expert Knowledge Database is divided into two parts: one part is the basic knowledge of the subject and the other part is the expert processing experience. When dealing with emergencies, the expert system will deal with them based on basic knowledge and expert experience.

In the computer network system, the expert knowledge database technology can be used to comprehensively analyze and evaluate each network structure of the network system, analyze its functions, and point out the need for improvement and then get improvement, so as to continuously improve the level of computer network technology⁴⁻⁵.

4. Conclusion

Since the information revolution of the 1970s, no discovery has ever changed the trajectory of humanity any more. So artificial intelligence has become an inevitable trend, which is also one reluctant action from a certain point of view. Nowadays, human beings are inseparable from the convenience brought by computer network, along with which are the negative effects. With the development of artificial intelligence, it has achieved initial progress in some industries, also

accompanying with some social problems. It is hoped that artificial intelligence can give play to the residual heat of the information revolution and create new possibilities for human development.

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