

A Study on the Research Field and Social Influence of Computer Artificial Intelligence

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Abstract

The rapid development of artificial intelligence technology has formed a systematic trend and gradually constructed an intelligent technology environment, which will have a great impact on human life style. The systematic development and popularization of artificial intelligence will deeply influence the way of human life. Based on the author's learning and practical experience, this paper first analyzed the research fields of computer artificial intelligence, and then discussed the impact of computer artificial intelligence on the society.

Keywords: Computer; Artificial intelligence; Research field; Social influence

1 Introduction

Artificial intelligence is also known as machine intelligence, which is a comprehensive discipline developed by the interpenetration of computer science, cybernetics, information theory, nerve physiology, psychology, linguistics and other disciplines. From the perspective of the computer application system, artificial intelligence is a science which studies how to create intelligent machines or intelligent systems to simulate the ability of human intelligence activities to extend the human intelligence[1]. Social development provides a good external environment for artificial intelligence artificial intelligence promotes social development. With the development of network technology and communication technology, artificial intelligence has stepped into various fields of social life with its strong penetration, which has greatly changed the social presence and profoundly changed people's thoughts and behaviors.

2 The Research Fields of Computer Artificial Intelligence

2.1 Intelligent robots

The Intelligent robot is an important field of artificial intelligence research, including the research of device programs which can operate the robot. Although a complex robot system has been established and thousands of robots serve the industry, these are some simple devices which conduct repetitive operation with beforehand programmed procedures. How to capture and process visual information and develop robots which can recognize the voice and image to process anthropomorphic reasoning is a very active field of artificial intelligence. Artificial intelligence research has promoted the development of robot research and robotics[2]. On the other hand, the research of intelligent robots has promoted the development of many artificial intelligence thoughts. The research and application of intelligent robots reflects cross-disciplines and involves many topics. Robots have been increasingly used in industries, agriculture, commerce, tourism, aerospace, marine and national defense.

2.2 Natural language understanding and machine translation system

Language processing is one of the earliest research fields of artificial intelligence. The most important outcome of natural language understanding is machine translation. Now, there are two major problems to introduce the machine translation to the market: first is the accuracy. As scientific and technical literature, and literary works have many technical terms, it needs experts to deal with the original text and revise the translation; the second is the translation speed. Translation needs a large font system, so effective and rapid search is one of the problems. Besides, how to reduce hours of the work before and after translation is another problem.

2.3 Automatic Programming

The study of automatic programming not only can promote the development of semi-automatic software development system, but also can promote the development of artificial intelligence system which can modify their own code to learn. A high-level description may be an elaborate statement of formal language, or a loose description, which requires to further clarify the ambiguity of the language with dialogue between the system and the user. One of the major contributions of automatic programming research is the refining concept of a problem-solving strategy[3].

2.4 Expert system

Expert system is an intelligent computer program system with special knowledge. It is used in artificial intelligence technology to reason and judge according to the knowledge and experience provided by one or more experts in a certain field. It can simulate the decision-making process of human experts and solve the

problem which just can be solved by experts. The expert system is generally composed of the database and inference machine. In recent years, the expert system has been applied in artificial intelligence technology to solve practical problems successfully[4]. The key to developing an expert system is about how to express and apply expert knowledge, which means to construct a database. It is about how to symbolize typical examples from human experts that have been proven to be helpful in solving related problems and then input them into a computer. Expert system is different from some computer systems in the past. It is a computer program system with symbol processing. Generally, it has no algorithm solution. It often draws some conclusions based on incomplete, inaccurate and indeterminate information.

2.5 Pattern recognition

The rapid development of computer hardware and the expansion of computer application fields require that the computer can perceive information materials that human need to develop and transform the environment more effectively, such as the sound, text, image, temperature and vibration. However, the computer can not directly perceive them. The keyboard, mouse and other external devices seem powerless to perceive the multifarious outside world. For TV cameras and microphones, because the identification technology is not advanced, the computer does not really recognize what the recorded information is. The low computer's perception of the external world is a development bottleneck in the development of computer applications. Therefore, the pattern recognition has developed rapidly which focuses on broadening the application fields of the computer and improving its ability to perceive the external information.

3 The Influence of Computer Artificial Intelligence on Society

3.1 Positive influence

First, ways of human labor tend to be simple and free with improvements of the efficiency. Artificial intelligence technology can greatly reduce the manual work of human, and can even reduce the intensity of human mental work with functions of artificial intelligence, such as machine learning, memory and automated reasoning. Besides, it can assist human to analyze data and make decisions. The purpose of artificial intelligence is to use machines constituted by inorganic substances to partially replace some functions of the human organic brain, so as to help people reduce the physical and mental labor burden. Therefore, mankind has more discretionary time to accomplish other tasks, which makes human life efficient and free.

Second, the basic necessities of life will develop in various ways. The combination of artificial intelligence technology and the basic necessities of life will completely change human's way of life. Intelligent refrigerators, smart TVs and other intelligent appliances have now entered millions of families.

Undoubtedly, these household appliances with voice recognition and image recognition technologies have more advantages in easy control and safety performance[5]. Self-driving technology of intelligent vehicles is in full swing in the development. We believe that in the near future, human will not have to worry about traffic congestion and driving fatigue, so that they can use the traffic time to study and work.

Third, the safety of human life is improved. The current theft-against technologies mainly include the digital password and electromagnetic password. Although these password protection methods are advanced, there are still loopholes and flaws and it is easy for criminals to crack and steal them. Image recognition and computer vision technology in the artificial intelligence field provide face recognition, fingerprint identification, iris recognition and other confidential methods, so that the secret, privacy, and personal and property security in people's lives can get more protection[6].

Fourth, human social interaction and recreation methods will be innovated. The best example is the social function of smart phones and entertainment function of somatosensory games, which are models of the application of artificial intelligence in social contact and entertainment. Smart phones can make it easier for strangers to contact and it is easier to start social activities. Obviously, there is a certain risk which needs to be treated with caution; somatosensory games can provide people with entertainment and help people exercise their body to become more healthy to a certain extent; on the other hand, these games can cultivate human body coordination and the spirit of mutual cooperation .

3.2 Negative influence

First, imperfect technologies become a burden in human life. Due to some imperfect technical means and less popularization of some applications, modern technical products may cause heavy burden in human life. For example, with the increase of electronic products, people need to carry too many chargers and look around for the power supply in their trip, which has brought inconvenience to human travel and life.

Second, the technical effectiveness makes people ignore their own initiative. The effectiveness of artificial intelligence is that it can help people save energy and mental work, and improve work efficiency and security to a certain extent, which has an extensive practical value. However, if things go on like this, humans will lack training and cultivation of the physical work skills and logical thinking ability, and they will ignore the development of their own energy and subjective initiative. Then, they will rely more on the effectiveness of artificial intelligence and other technologies. To this end, human essential force is bound to be weakened, which can be called as an alienation phenomenon that technologies exert on human life and work[7].

Third, the liberation of hands has led to distraction. Human upright walking liberated man's hands physiologically for the first time and it turns human to mankind. The development of artificial intelligence may complete the liberation of human hands in sociality for the second time and this makes it possible that

people can conduct multiple tasks simultaneously. The progress of technology provides people with more effective tools and many tools are mutually exclusive which can not be used at the same time; some are not mutually exclusive and can operate at the same time. This is very likely to distract people's attention and people cannot concentrate attention when they handle multiple tasks, which may result in a certain risk in the operation.

Fourth, it is possible that the development of artificial intelligence goes beyond the scope of human control. Artificial intelligence reflects the characteristic of technology autonomy and it is the most obvious technology which manifests autonomy, because it takes endowing machine with human intelligence as the ultimate goal.

4 Conclusion

Artificial intelligence technology is an information technology, which can be transmitted quickly. Therefore, there exist some potential hazards which are dangerous than explosion technology, but human beings have enough intelligence and confidence to develop intelligent means to prevent, check and detect all kinds of intelligent criminal activities. Artificial intelligence technology has a huge impact on human social progress, economic development and cultural improvement. As time progresses and technology advances, this influence will become increasingly apparent. Besides, there are other influence that we might not predict currently. It can be confirmed that artificial intelligence is bound to have an increasing impact on human material and spiritual civilization .

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