Application of artificial intelligence based on machine learning

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Abstract. In recent years, China's science and technology is developing rapidly, and has made a lot of achievements in the field of high-tech, which greatly promotes the improvement of China's national economy and the improvement of people's daily life quality. Computer information technology is one of the most important modules in the development of science and technology. The traditional computer information technology has effectively improved the efficiency of people's production and life, and played a good bridge role in the communication between people. However, in view of the current development of electronic information technology, the traditional computer information technology has been unable to meet the growing needs of people's computing. Artificial intelligence based on machine learning has gradually stepped into people's vision and attracted more and more attention. In this paper, the application of artificial intelligence based on machine learning will be discussed and studied in detail from multiple perspectives, so as to better apply artificial intelligence in future life.

1. Introduction

The wave of scientific and technological revolution has a great impact on the global science and technology field. Every country fully realizes that the emergence of artificial intelligence, an advanced science and technology, will have a great impact on people's future production and life. For example, Google pioneered the concept of "self driving vehicle" and applied it in real life, which largely means the arrival of the era of artificial intelligence based on machine learning. However, while enjoying the convenience brought by artificial intelligence, people should also be aware of the challenges brought by artificial intelligence, so as to ensure the sound development of machine learning and artificial intelligence under the premise of scientificity and rationality, and give full play to the advantages of artificial intelligence in machine learning, so as to better serve human beings. This is the research basis for the application of artificial intelligence based on machine learning, and it is also the research direction of artificial intelligence in the future.

2. The concrete concept of machine learning

Artificial intelligence is composed of many different science and technology. Machine learning is an integral part of artificial intelligence. As the name suggests, the main research content of machine learning is to enable the machine to obtain relevant experience independently, optimize its own function, and timely conduct scientific and reasonable analysis of data, improve the accuracy of data analysis through modeling and other methods, and achieve simple prediction of the time not yet occurred by machine learning [1]. Machine learning is an advanced technology with high heat in the field of artificial intelligence. It is mainly based on the mature development in the past to complete the
improvement work through the machine, so that it can better adapt to the new algorithm today. In machine learning, the more data is processed, the better the prediction effect is, which can better meet the current high standards and requirements of data processing.

3. Development status of artificial intelligence based on machine learning
Artificial intelligence based on machine learning has made great progress in recent years. So far, machine learning can be divided into two parts: small data analysis learning and big data environment background analysis learning. In the small data analysis of machine learning, it is usually for the data of artificial intelligence memory. If people do not distinguish the small data based environment and traditional machine learning carefully, it is easy to confuse the two. In terms of machine learning based on small data environment, its learning process is usually combined with human learning process. By imitating the human learning process to achieve the purpose of easy operation and communication of relevant staff, the machine learning system can smoothly transform the input and output work with human beings, and strengthen the collection and processing of information data by artificial intelligence based on machine learning through communication.

With the application of sensors and connecting devices in the field of artificial intelligence in more and more aspects of machine learning, the number of "zebyte" data has been greatly increased with the expansion of the popularization range of machine learning [2], which fully shows that the era of artificial intelligence based on machine learning has come, and the background of big data era has become the precondition for the application of machine learning today. However, it is difficult to store big data in memory for a long time. Therefore, it is one of the main research contents of machine learning and the key problem of artificial intelligence application based on machine learning to screen useful knowledge and data information quickly and accurately in the big data with large amount of data and complex and disordered contents. For the development status of artificial intelligence application based on machine learning, big data partition and sampling, feature selection and classification, clustering and association are the main research objects and contents in big data environment.

4. Artificial intelligence based on machine learning
In recent years, the field of artificial intelligence based on machine learning has gradually set off the learning trend of deep learning. Deep learning mainly refers to modeling work based on big data by using multi-layer neural network model. For example, the successful establishment of alphago system in Google is the application of modeling process in big data foundation. First of all, relevant staff through the analysis of the actual situation of people playing chess, to ensure that the number of data analysis groups is enough, and then establish a relatively mature and clear chess game strategy network, and combine people's understanding of chess game to build a perfect valuation network. Finally, the Monte Carlo search tree algorithm is applied to the alphago system, and through this series of processes and links to determine the way of moving and falling the next move [3], people's evaluation of alphogo's chess power is shown in the following figure:
The research focus of artificial intelligence based on machine learning is not only deep learning but also deep learning. Combining the system with the algorithm closely, by building a large-scale distributed machine learning algorithm, with the help of more processors and machines to complete the processing and prediction of data information, is also the key research content of artificial intelligence based on machine learning, which is usually applied in the processing process of extremely large amount of data information. In the traditional computer science computing program, operating system, language and algorithm are the core of computer computing [4]. With the rapid development of computer information technology, the machine learning computing mode of cross domain cooperation has replaced the traditional computer science computing program, greatly accelerating the efficiency of data processing. This is not only valuable for the development of machine learning and artificial intelligence, but also has important value for the future development of artificial intelligence.

Figure 1. Alphogo's bar chart of chess power evaluation
5. Future development trend of artificial intelligence based on machine learning
At present, artificial intelligence based on machine learning has been committed to the analysis and research in the field of optimization algorithm. The staff spend a lot of manpower, material and financial resources to find ways to deal with various convex optimization and non convex optimization problems, explore better processing measures for distributed optimization, and strive to find the optimal solution with strong comprehensive performance [5]. In the process of predicting the future development trend of artificial intelligence based on machine learning, we must not only pay attention to the advantages of machine learning and artificial intelligence, but also pay attention to the disadvantages and negative effects brought by the development of machine learning and artificial intelligence to human society. In today's field of artificial intelligence, although intelligent robots with machine learning ability have appeared, intelligent robots still lack the ability to recognize common sense and reasoning ability of information in daily life, which shows that intelligent robots still have great development space and excellent development prospects in machine learning. In the field of artificial intelligence, the development level of vision field is limited. In the future development of artificial intelligence based on machine learning, it can increase the learning ability of relationship understanding and scene cognition.

On the basis of optimization algorithm, artificial intelligence based on machine learning will develop into reinforcement learning, probability graph model and statistical relation learning in the future, so that machine learning can provide better and convenient services for people's future production and life.

6. Application of artificial intelligence based on machine learning in various countries

6.1. UK: let machines learn by themselves
In the application of artificial intelligence based on machine learning, Britain has been committed to the research of making machines self-learning. As early as 2010, the deep mind team of London University successfully invented alpha go, a machine learning program. The invention of this machine learning program has set off an upsurge of artificial intelligence worldwide [6]. The application of deep mind program is based on the general learning algorithm, adding a variety of practical computing functions, combining machine learning and artificial intelligence organically, further improving the intelligent performance of the program, and providing basic guarantee for machine learning. Deep mind is widely used in many fields of artificial intelligence in the United Kingdom, and has played an excellent advantage. The machine learning in deep mind also installed a graphics processing module for alpha go intelligence, which enables alpha go to actively complete the "learning" process of the game [7].

6.2. China: artificial intelligence throughout the whole industry
The development of artificial intelligence in China started late, but the development speed did not lag behind other countries. At present, the development of machine learning and artificial intelligence in China is not aimed at a single field, but through the research of machine learning, the artificial intelligence technology can be effectively strengthened, and the application scope of machine learning and artificial intelligence will be expanded, so that it can be popularized in more and more industries [8].

For example, Baidu and Tencent, which are leading Internet companies in China, have set up artificial intelligence laboratories and research institutes around the world, and fully affirmed that artificial intelligence based on machine learning is a strategic R &amp; D project for future development, so as to ensure that artificial intelligence can have a positive impact on all industries in China.

6.3. America: dedicated to robot video recognition
The scientific development level of the United States itself is in the forefront of the world. With the continuous improvement of human-computer intelligent interaction level, the United States fully
realizes that the technology of computer recognition of pictures and characters has a broad development prospect in the future, so it has invested a lot of energy in the application of artificial intelligence based on machine learning in the field of robot video recognition [9].

The expansion research in the field of video recognition in the United States started in 2010. Vicarious first developed image and video recognition system, and compared machine learning and artificial intelligence with human brain, hoping to achieve the goal of improving the application of artificial intelligence for robot video recognition by copying the basic structure and function of human cerebral cortex. And through the combination with machine learning, it has the function of understanding language and mathematical calculation [10].

7. Conclusion
To sum up, artificial intelligence based on machine learning has been widely concerned by people all over the world. With the development level of artificial intelligence becoming higher and higher, its popularity and application range in various fields are becoming more and more extensive. The fields of artificial intelligence such as machine learning, natural language processing and big data background have made great progress in recent decades achievements. It is not only a great help to the daily life of modern people, but also marks the arrival of the era of artificial intelligence based on machine learning. Not only that, artificial intelligence technology is also widely used in finance, transportation, medical and other fields. This fully shows that the application of science and technology products has been all over people's lives. However, while enjoying the convenience brought by artificial intelligence, people should always be alert to the challenges brought by the development of artificial intelligence technology to the society, strengthen the control of the application of artificial intelligence, and ensure the scientific and rational use of artificial intelligence.

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