Research the Application of Artificial Intelligence Technology in Mobile Phone Terminal

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Abstract. Computer Science and technology are following the wheels of social development, constantly moving forward, and epoch-making artificial intelligence technology has emerged. As soon as artificial intelligence technology appeared, it quickly became popular in all industries. After applying artificial intelligence technology to the Internet, society's demand for artificial intelligence has reached a peak.

Keywords: Internet, Development, Artificial Intelligence Technology, Smart Phone

1. Description of artificial intelligence

The emergence of artificial intelligence technology has given the Internet a new development goal. Artificial intelligence is constantly innovating the mobile Internet. The modern mobile Internet has been inseparable from artificial intelligence technology, which is mainly reflected in the application of artificial intelligence technology to new things to enrich user experience, and the use of artificial intelligence technology to analyze big data, and then Customers have a clearer positioning. In order to provide better services to enhance user experience. Artificial intelligence technology has high autonomy and is universally applicable. It can also continuously optimize and upgrade itself, so it plays a huge role in data processing and calculates a more complete model. The artificial intelligence system is to acquire and use knowledge. Its essence is to use a large number of data samples and constant i calculations to reproduce the thinking process of the human brain, thereby possessing human wisdom. Now, artificial intelligence has been widely used, continuously improving people's living standards and quality.

2. Technical classification of artificial intelligence

The following mainly describes these three aspects--More Data in-depth mining analysis and machine learning; Knowledge intelligent processing and data analysis under the expert system; Human-computer interaction.(As shown in Figure 1)
2.1. Data in-depth mining analysis and machine learning

Artificial intelligence plays a very important role in the in-depth analysis of large amounts of data and insight into series data, especially machine learning under artificial intelligence, which has a unique role in mining data. Fundamentally speaking, machine learning is a technology that replicates human learning through computer calculations. It essentially sublimates the intelligence of computers, and machine learning occupies the most important position in the entire artificial intelligence research system, and its presence can be seen everywhere in artificial intelligence. Based on the reaction produced by the human brain during learning, people created a neural network to imitate the reaction mechanism of the human brain, so the neural network has some of the advantages of the human brain. It can independently analyze and process data and build models, and it can also handle difficulty coefficients. Very high multi-dimensional nonlinear problems\cite{1}.

2.2. Knowledge intelligent processing and data analysis under the expert system

When dealing with knowledge, the expert system plays a major role. Expert system, as a pivotal subsystem in the field of artificial intelligence, combines professional knowledge with ordinary thinking mode, and has made great progress in solving professional knowledge problems, breaking the existing theory from theory to reality. The expert system reserves a large amount of professional knowledge and professional related experience. With the support of reasoning technology, it can act as an expert and answer highly professional questions\cite{2}. As the first technical system involved in artificial intelligence, the expert system has played a role as a catalyst in the field of artificial intelligence. With its development, some new technologies have been born.(As shown in Figure 2)
The most valuable ai features considered by Chinese users in 2018

Figure 2. The most valuable ai features considered by Chinese users in 2018

2.3. Human-computer interaction

Human-computer interaction is to enable the robot to intuitively reflect some of the characteristics of human beings, to be able to communicate emotionally, and ultimately to realize the autonomous communication of the robot, and to perform different divisions of labor reasonably according to the requirements of different people. Human-computer interaction can be used in reality thanks to the continuous development of machine learning technology and pattern recognition technology. Robots without the support of artificial intelligence technology will only simply imitate human actions, and artificial intelligence can use pattern recognition technology to give robots a perception similar to humans and can react to the outside world. In the era of mobile Internet, the application of artificial intelligence technology[3].

3. Current development of smartphone technology

American Apple can be ranked in the forefront of the smart phone industry and even the entire Internet industry, which is inseparable from its continuous reform and innovation of smart phone technology. The industrial development brought about by technological innovation will also greatly promote the technological development of mobile memory chips and other territories, which is of great significance to the entire communications territories and the Internet industry. Therefore, it is necessary for us to improve the current smart phone technology. Research on development and future trends[4].

3.1. Full screen and under-screen fingerprint

Since Apple released the iPhone X, the full screen has become a new technology sought after by all smart phone manufacturers, and it has also become popular at a very fast speed. However, due to
technical constraints, the current so-called full screen only maximizes the screen-to-body ratio, and there is no 100% truly full screen mobile phone. At the same time, the fingerprint recognition technology under the screen has gradually been developed and applied. For example, the domestic smartphone vivoX20, the fingerprint recognition technology applied is not inferior to the common capacitive recognition technology. The fingerprint recognition experience under the screen of the mobile phone is very good. The reaction and unlocking time is fast [5]. In addition, the type of identification technology originated from JDI, whose research and development of transparent capacitive fingerprint sensor based on glass material can be integrated into the LCD screen.

3.2. Facial recognition

In terms of security performance, Apple’s iPhone X facial recognition can be said to rank among the top. Compared with traditional single-camera facial recognition technology, the Face ID used by the iPhone X can perceive depth and prevent it from being photographed during the recognition process. It is deceived, and its working principle is to reflect and receive after emitting light, which can effectively deal with the problem of light source and realize the unlocking in the dark environment. At present, some domestic smart phone manufacturers have also begun to research and apply this technology, such as the cloud depth camera accessories released by Huawei."

3.3. Wireless charging

Judging from actual usage, the current efficiency of wireless charging cannot keep up with wired charging, but it allows users to use fragmented time while also eliminating the trouble of charging cables. At the end of 2017, the National Institute of Information and Communication formulated and submitted the "Technical Requirements and Testing Methods for Fast Charging for Mobile Communication Terminals", which clearly defined "fast charging" and unified the communication protocol to clarify the safety and reliability of wireless charging. It is helpful to promote the integration of fast charging technology standards.

3.4. AR technology

After 2017, smartphone AR technology has received more attention, and then Apple also announced a new AR formation to users around the world: AR Kit. In the 2018 Apple new product launch conference, you can also see many products support for AR. Although AR smart phone applications are focused on games at this stage, it is believed that more smart phones and AR software that support AR will be seen in the near future.

4. Mobile application performance analysis

Due to the ultra-high-speed increase in the number of mobile application software, the number of mobile applications has also exploded. Because the number is too large, there are no relevant specifications. The choice of mobile applications has become a problem that users must first solve. In order to solve this problem, users can choose mobile applications based on software rankings and rational analysis, which not only helps the software to improve its strength, but also forms a good development. When analyzing mobile data, only relying on big data processing and in-depth analysis and information collection can make results. And big data analysis requires various machine learning
algorithms. Among them, the strongest technical support for big data analysis is the enhanced learning algorithm and the deep learning algorithm based on neural network. In the neural network, as energy consumption and time delay indicators in different situations, different algorithms need to be collected and stored. Then, the weights of the neural network are generated by analyzing the application of different functions. In order to obtain the neural network model, training and feedback calculations are required.

4.1. The mobile application opens a new identity authentication mode

The Identity authentication opens a new world for the use of artificial intelligence algorithms. Username + login password is currently the most widely used authentication method. But it has its own natural disadvantages, such as forgotten passwords or cracked one or more books. In order to avoid these shortcomings, the multi-factor authentication mode and the biometric authentication mode are being vigorously promoted. Multi-factor authentication is to combine different authentication methods and combine the advantages of most authentication modes. Remove the shortcomings of their own authentication model. Please analyze and process the recorded data, and then create a reasonable model. Therefore, it has a certain degree of prophecy on the behavior of users and refuses to access behaviors that do not match the model. Combining the password with the big data map can greatly improve the safety factor. The key to biometric authentication is to record the appearance characteristics of users. The memory contrast analysis of its unique morphological characteristics. The safety factor of the biometric authentication mode is much higher than other modes, and it becomes more convenient and efficient with the development of technology. However, the amount of information required for biometrics to be controlled and compared is too large, and more artificial intelligence algorithms are needed to help compare analysis and confirm results.

4.2. Virtual reality under artificial intelligence

Because of the use of artificial intelligence technology, emerging technologies such as virtual reality have emerged on the mobile Internet. The server of the virtual spot first receives the collected experiencer data, and then sends the processed data to the experiencer's device. In order for users to have a better experience, the data transmission time must be continuously reduced. The emergence of artificial intelligence algorithms has made instantaneous data calculation possible, paving the way for the further development of virtual reality. Internet technology has penetrated almost every corner of the mobile Internet and is constantly changing the Internet.

5. Conclusion

This shows that artificial intelligence technology has become the core technology supporting the development of the mobile Internet[6]. While raising the upper limit of Internet development, it also broadened the scope of the Internet. The deep integration of artificial intelligence and mobile Internet has created a new development model that constantly controls the advancement of science and technology.

References

[1] Guo Jing. Try to analyze the application of artificial intelligence technology in the mobile
terminal wall[J]. Digital Communication World. 2015, (12): 8.

[2] Longhu. Zhang Xiaomei, Tang Linhai, etc. Research on the construction of smart education cloud platform under the background of big data[J]. Computer Knowledge and Technology, 2015.11(20):109111.

[3] Song Xiaoyu, Lu Yan, Artificial Intelligence Technology Application in the development of mobile Internet[J]. Military-civilian dual-use technology and products, 2017. (24):75.

[4] Tang Biao's research on the development path of domestic smart phones[I]. Jianghuai Forum, 2014, (03): 85-89.

[5] Liu Xiaoqi Research on the current development countermeasures of China's smart phone industry[J] Television Technology, 2014, 38(12)-58-61.

[6] Tian Jinping. Summary of Artificial Intelligence Development[J]. Science and Technology Plaza, 2007.1.