

Research based on computer artificial intelligence recognition technology and its application

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Abstract: Under the background of the continuous improvement of human science and technology, the artificial intelligence industry has developed rapidly. At present, computer artificial intelligence recognition technology has been widely used in social production and life, from the perspective of social production, this technology can not only improve the automatic control level of enterprises, but also greatly improve the quality and efficiency of production, so as to create greater social and economic benefits; From the perspective of social life, it helps to improve people's convenience in life. Starting from the connotation and categories of computer artificial intelligence recognition technology, this paper analyzes the specific application of this technology, and discusses its future development direction, hoping to provide reference for relevant colleagues.

1. Introduction

In recent years, computer artificial intelligence technology has developed rapidly, which has a far-reaching impact on promoting the long-term development of various fields. As a branch of it, recognition technology mainly includes fingerprint recognition, face recognition, voice recognition, bar code recognition and other technical categories, and is more widely used today, which not only meets the development needs of social enterprises, but also greatly improves people's quality of life. In order to further tap the application potential of this technology, relevant practitioners need to continue to strengthen the research on computer artificial intelligence recognition technology in future work, continuously expand its application field and scope, and enhance its practicality, to promote the change and development of human society.

2. Overview of Computer Artificial Intelligence Recognition Technology

2.1 Connotation

The so-called computer artificial intelligence recognition technology refers to the use of computer intelligence to imitate human recognition ability, so as to achieve automatic computer recognition. For example, when identifying someone's identity, this technology can scan the facial features of the target person based on face recognition and artificial intelligence technology, and then store it in a

computer database, and if the target person reappears, it can be compared with its facial features by scanning to identify and confirm its identity. At present, computer artificial intelligence recognition technology has become more perfect and mature, which makes it widely used in many fields of society, to meet the needs of social development.

2.2 Categories

According to the analysis of the current development of computer artificial intelligence recognition technology, it has derived a variety of categories, among which speech recognition technology, fingerprint recognition technology, face recognition technology, radio frequency identification technology and bar code recognition technology have been widely used.

First, speech recognition technology. Under normal circumstances, there are obvious differences in each person's voice quality and tone characteristics, so the user's voice can be analyzed through computer artificial intelligence technology, so that its identity can be accurately identified. In practical applications, it is first necessary to build a pattern library for the removal of sound characteristics, pattern matching and use. As this technology continues to mature, it has a profound impact on promoting the development of the field of human-computer interaction.

Second, fingerprint recognition technology. This technology is mainly to identify and confirm the identity of people by scanning and comparing their fingerprints, specifically scanning and comparing fingerprint endpoints, ring points, crack points and isolation points and other more characteristic content. The reason why fingerprint recognition technology can be widely used is mainly because each of our fingerprints is obviously different, and the difference has the characteristics of stability, convenience and uniqueness, so the effective identification and confirmation of the identity of the target person can be achieved by scanning and comparing fingerprint features. In the implementation of this technology, it is necessary to establish a perfect fingerprint recognition system, which involves image acquisition, processing, comparison and other modules, and the technology has been widely used in the fields of access control system, electronic payment and electronic document protection ^[1].

Third, face recognition technology. In modern society, face recognition technology has a wide range of applications in social production and life, mainly through high-definition computer to collect the face image data of the target person, and then classified and processed for storage, for identification and determination of user identity. According to the understanding of the technology development and application process, the core lies in the algorithm of face recognition technology, which directly affects the recognition accuracy of key features of different faces. At present, the application of face recognition technology in the fields of access control systems, online payment, video surveillance and other fields is becoming more and more common, which greatly facilitates people's lives.

Fourth, radio frequency identification technology. In addition to the above-mentioned intelligent identification technology with living characteristics, there are some intelligent identification technologies with no living characteristics also play an important role in social production and life, of which radio frequency identification technology is a more representative one. It mainly uses tags and readers to complete data communication without contact, so as to efficiently identify targets. At present, this technology has a wide range of applications in logistics management, enterprise production line automation, animal chips and other fields.

Fifth, barcode recognition technology. Similar to radio frequency identification technology, bar code recognition technology is also a kind of inanimate intelligent identification technology, which is mainly composed of arranged characters, bars, etc., and the process of identifying a barcode usually requires the help of corresponding equipment for reading. In practice, the barcode is usually scanned first, and then the corresponding identification information is obtained through decoding to determine

the identity information of the target. At present, this intelligent identification technology is widely used in the fields of book management, banking system, commodity trading and circulation.

Sixth, smart card identification technology. A smart card is a plastic card with a chip inside, which can enable data exchange through a reader. There are many types of smart cards, such as identity document (ID), integrated circuit (IC), central processing unit (CPU), etc., among which integrated circuit cards are more common in life and can be used to complete tasks such as control and payment.

3. The Specific Application of Computer Artificial Intelligence Recognition Technology

As an important part of computer artificial intelligence, the application of recognition technology in modern society is becoming more and more common, among which typical applications include the application of language translation, the application of speech recognition, the application of fingerprint recognition, the application of visual recognition and the application of two-dimensional code, the specific analysis is as follows.

3.1 Application in Language Translation

Language has instrumental characteristics, and the application of computer artificial intelligence recognition technology to the field of language translation is of great significance to give full play to its instrumental value. In specific applications, terminal devices can quickly recognize text according to language, language type, etc., and can realize rapid conversion between different languages. Taking common translation software such as Youdao Dictionary and Google Translate as an example, people can enter the text language to convert it into the target language, so as to facilitate people's communication ^[2].

3.2 Application of Speech Recognition

Regarding the application of speech recognition, computer artificial intelligence recognition technology needs to establish multiple system modules, such as voice input module, voice recognition module, voice control module, storage and display unit, etc. In the process of language recognition, the key is to communicate with people in real time through concise and accurate language, so as to continuously meet the application needs in real life. With the continuous development of science and technology, the current application of this technology in speech recognition has also made great progress, which is manifested in the improvement of the accuracy of recognition, which greatly reduces the possibility of errors in speech recognition, which plays an important role in promoting the effective interaction between humans and robots. At present, voice recognition technology is widely used in voice controllers, smart toys and other fields, which can effectively meet people's life needs. For example, many people currently use voice controllers when decorating their homes to control lights, air conditioners, TVs, etc., which is of great value to improve people's quality of life. In addition, in the field of intelligent robots, it also involves the application of speech recognition, such as the communication between intelligent robots and people, it is necessary to answer the corresponding questions based on speech recognition technology to achieve human-computer interaction, so that it can work better.

3.3 Application of Fingerprint Recognition

As we all know, each person's fingerprint is unique, so fingerprint information can be entered to achieve identification and confirmation of the identity of the target person. At present, fingerprint recognition is widely used in social life, such as in the human resource management of many

enterprises, fingerprint recognition technology is used to understand the commuting of employees, as an important basis for performance appraisal. In addition, many smartphones now also have the function of fingerprint unlocking, which is of great value for better protection of personal privacy information, and users will not be unable to use their mobile phones normally because they forget their passwords.

3.4 Application of Visual Identification

It is not difficult to see from real life that this technology is also widely used in visual recognition, among which the more typical is the application of face recognition technology. In the past, we often need to pay cash when shopping, so not only carry trouble, but also have the risk of loss, theft, etc., and with the rapid development of face recognition technology and intelligent terminal equipment, now people do not even have to bring anything when shopping, and only use the camera aimed at the settlement system to scan their facial features to complete online payment. Similarly, taking high-speed trains, taking subways, entering and exiting community doors, etc., can rely on face recognition technology to save time ^[3].

3.5 Application of QR Codes

In the case of people's continuous improvement of living standards, the popularity of mobile smart devices is getting higher and higher, and this has also promoted the application of QR codes in social life to a large extent. As a typical application of computer artificial intelligence recognition technology in social life, it is mainly the recognition and use of QR codes. Since QR codes are combined graphics arranged according to specific rules, making them unique, users can scan them through smart devices to quickly identify the corresponding information. For example, the mobile payment function of apps such as WeChat and Alipay is based on the application of QR code to realize payment and payment, which is faster and more convenient than traditional payment methods. Moreover, in the process of visiting some websites or logging in to social software in daily life, we can also quickly log in by scanning the QR code, which not only ensures the security of user login, but also makes the login process simpler and more convenient.

3.6 Application of Smart Cards

From the above content, it can be seen that the more common types of smart cards are IC cards, ID cards and CPU cards, of which the application of IC cards in life is more common, such as many communities, enterprises and institutions have adopted IC card access card identification technology, the purpose of which is to identify visitors, to avoid unrelated people entering the community or unit. In the application of access control system, computer artificial intelligence identification technology plays an important role, in specific practice, relevant technicians need to install card readers or other types of identification equipment at the security entrance, so as to achieve the control of import and exit. Authorized personnel can only enter and exit smoothly with a smart card that verifies their identity, which not only facilitates internal personnel management, but also saves labor costs.

4. Conclusions

In the continuous development of modern science and technology, computer artificial intelligence recognition technology has become more and more mature, and its advantages are more prominent, which makes this technology applied in many fields of society, and has important value to meet the diversified life needs of modern people. However, it is necessary to clearly understand that China still

has a lot of room for progress in the research and development of computer artificial intelligence recognition technology, so relevant practitioners need to continue to optimize and improve this technology to enhance its practicality, so as to better serve social development.

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