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Research on the application of face recognition technology in Electronic Commerce

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Abstract. In recent years, with the continuous development and update of Chinese information technology, the Internet information technology has been applied in all walks of life, even appears in our medical career, military system, social enterprise and so on many professions, especially electronic commerce industry. In order to effectively ensure the security, reliability and substance of e-commerce technology, Internet information technicians adopt the scanning authentication method to authenticate the user identity and ensure the authenticity and effectiveness of the user identity. Because the face recognition system is through the computer to scan the face image, so as to identify the identity information, compared with the traditional means of identification, has a certain degree of security and reliability. This paper mainly analyzes and studies the specific application performance of face recognition technology in e-commerce industry.

Keywords: Face recognition technology; Electronic commerce; Application Research

1. Overview of face recognition

Face recognition technology is mainly through the use of the Internet information technology of visual scanning technology, specific face technology is mainly divided into two categories, respectively generalized face recognition technology and narrow face recognition technology, and these two types of face recognition technology, the former through the construction of perfect face recognition system technology, so as to treat the recognition of face image scanning, In the process of scanning recognition to obtain useful information, these useful information and the database face information is compared, so as to match the consistent face information data; The latter is through the scanning of the face between the identification, this way in the application process is more complex, long time, poor effect. At present, the face recognition system commonly used in Chinese e-commerce enterprises is mainly composed of face detection technology, feature extraction technology and face recognition technology. The specific face recognition technology is shown in Figure 1:[1]

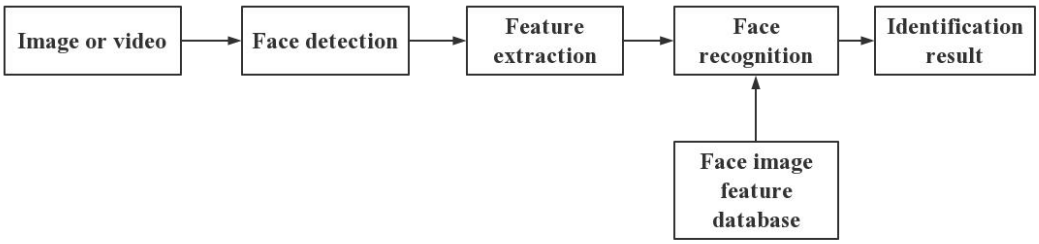

Figure 1. Schematic diagram of face recognition system

When Internet information technology improves the face recognition system, it mainly carries out scientific research and innovation from the following four perspectives: (1) Face detection: technicians need to sort out the face data detected under different backgrounds. At the same time, when detecting face data, they need to strictly require the location, size and shape of the face, and finally extract useful image data. (2) face normalization. At present, Chinese Internet information technology researchers are gradually breaking through the correction of face rotation change. (3) Face representation. Information technology personnel through the use of the Internet database to identify the face of the comparison, so as to screen the face of the owner. (4) Face recognition.

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Designers according to the detection of human face features, in the large database to choose the most appropriate detection method, so as to achieve the purpose of face detection.[2]

As we all know, face recognition technology is through the face model library to complete, technical personnel through the use of computer image information technology, recognition technology to detect and verify one or more face data information under different scenes, different environments, and through data recognition information technology to achieve face data matching.

2. The basic principle of face recognition technology

The application principle of face recognition technology is mainly through the use of the existing face sample database, with the help of image processing technology and face pattern recognition technology, in one or more scenes to recognize, verify one or more faces, and finally complete the process of face recognition. The current Chinese classic face recognition system processing flow is shown in Figure 2.

With the continuous development of our country's information technology, face recognition technology has been gradually improved, because face recognition technology and other technology is different, we need to make full use of computer technology to identify and screen the static and dynamic image, and according to the face data combined with screening human face features, extract useful information. The advantage of face recognition technology is that the detection of people without direct contact with scanning equipment, easy to use in the public security organs to arrest criminals, medical treatment, banking, certificate verification and other ways, and the existing shortcomings are: Face recognition system has a very high requirement on images, which requires high-grade cameras to recognize, capture and detect human faces. Moreover, the Angle and intensity of illumination also directly affect the scanning accuracy of face recognition system.[3]

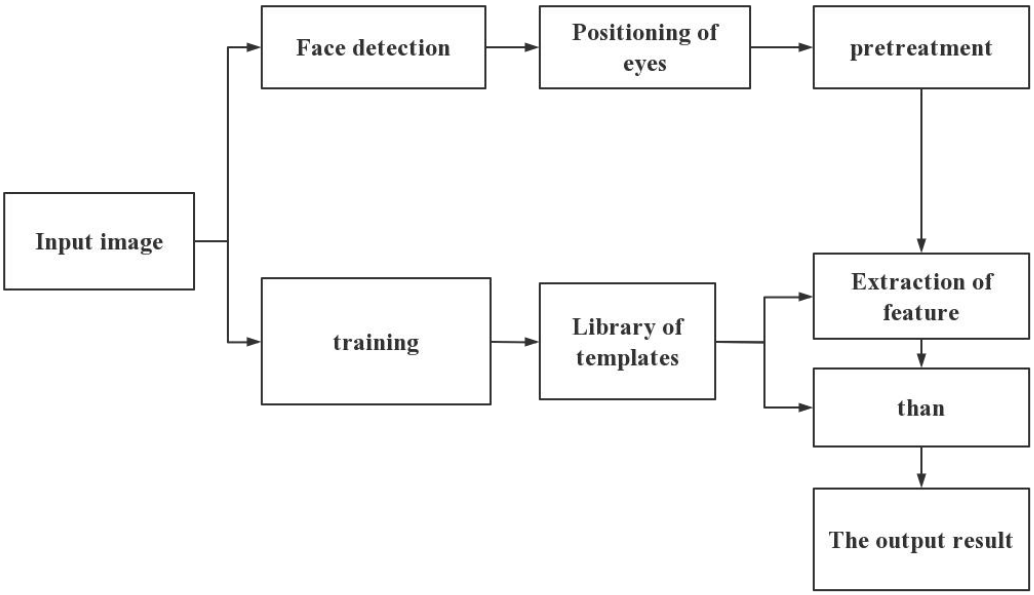

Figure 2. Schematic diagram of face recognition technology

3. Face image preprocessing technology

Face recognition preprocessing technology is mainly through the use of the input image to extract, recognize, segment and match the face features, and finally upload the processed data information to the client. Face image preprocessing technology is mainly through eliminating light, noise to bring changes to the image. Because of the different face image acquisition environment, will lead to the size of the scanned face, position and image quality differences, therefore, technical

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personnel need to process and adjust the face image properly. In order to better complete the operation technology of face preprocessing, technicians simply organize the preprocessing process of daily work, as shown in Figure 3 below.

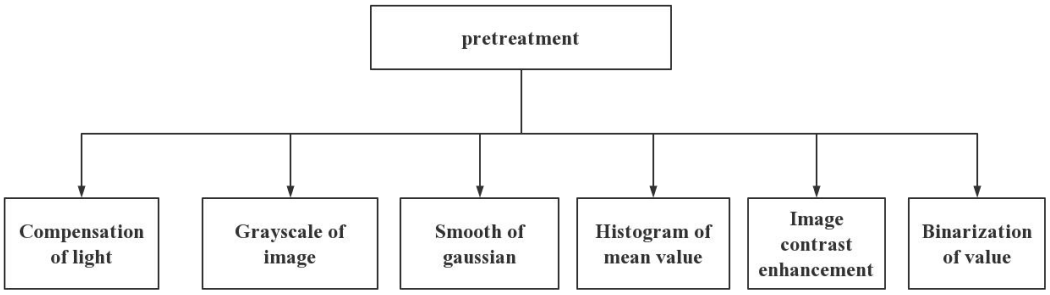

FIG. 3 Pretreatment flow chart

(1) Light compensation. Technicians examine the extracted images in detail and compensate for light imbalances to ensure that key features are fully displayed.[4-5]

(2) grayscale change. By converting the color image into black and white image, and converting the color image into gray, the image information is more purposeful and accurate.

(3) Gaussian smoothness. Gaussian smoothing is mainly through the image to eliminate noise.

(4) Contrast enhancement. By using contrast to further process the image and grayscale processing of each pixel in the original image, technicians will change the way of image enhancement function to make the image play a different effect.

(5) binarization. Binarization is mainly used to change the color of pixels in the image by using algorithms. Since the image is generally composed of black and white areas, if the black is regarded as "1", then the white can be seen to make the number "0", and extract image pixels from features with intra-group variance and out-group square difference.

(6) Histogram equalization. Technicians will transform the gray square in the original image from part of the area to all areas, so as to achieve the purpose of gray all areas.

4. Conclusion

In the information age today, the use of biological password has entered people's life, study, work, and people are closely related, and face recognition technology can directly identify and detect people's identity information, protect people's privacy security, but face recognition technology in the operation process, there are still a series of problems, need to continue to improve the exploration, Can play a greater role in the future days.

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