

FACE RECOGNITION SYSTEM IN DEEP LEARNING

This article mainly introduces the application of deep learning in face recognition system, which makes face recognition system quicker, safer and higher recognition rate.

INTRODUCTION

The face recognition system includes image capture, face positioning, image pre-processing, and face recognition. The most important link is the face recognition link. Using deep learning can make face recognition quicker, safer and higher recognition rate.

I. REASONS FOR USING DEEP LEARNING

The advantage of face recognition lies in its natural and undetectable characteristics.

The so-called naturalness means that the identification method is the same as the biological characteristics used by humans (or even other creatures) for individual identification. For example, face recognition, humans also distinguish and confirm identities through observation and comparison of faces. In addition, natural recognition includes voice recognition, body shape recognition, etc., while fingerprint recognition and iris recognition are not natural, because humans or other Biology does not distinguish individuals by such biological characteristics.

The characteristic of being undetected is also very important for an identification method, which makes the identification method not objectionable and is not easy to be deceived because it is not easy to attract people's attention. Face recognition has this feature. It completely uses visible light to obtain facial image information. Unlike fingerprint recognition or iris recognition, it needs to use an electronic pressure sensor to collect fingerprints, or use infrared to collect iris images. These special collection methods are easy Being noticed by others makes it more likely to be deceived by disguise.

II. DIFFICULTIES IN FACE RECOGNITION SYSTEM

The shape of the face is very unstable.

The visual image of the face varies greatly at different viewing angles. In addition, face recognition is also affected by light conditions (such

as day and at night, indoor and outdoor, etc.), many face coverings (such as hair, beard, etc.), age, shooting attitude angle and other factors.

III. IDEA ABOUT SOLUTION

We may change our regular static photos when entering photos. Instead, we use multiple cameras to record multiple aspects to get a set of 2.5D static images, then creating a database of three-dimensional model.

Using the constructed 3D imaging, we can automatically construct and generate the possible characteristic states of the same individual in different light environments in the background. For example, the degree of shadow of the face under different lighting, the possible shooting angle, and so on.

Compared with static images, this technology can increase the amount of our recorded information on the one hand, and improve the accuracy of our information matching to a certain extent; on the other hand, because more scenarios are simulated in the database in advance, This will also make our matching efficiency have a greater improvement.

IV. CONCLUSION

The application of deep learning in face recognition is undoubtedly successful, and has been put into practical application, such as mobile face payment, access control system in student dormitory and so on. This technology will be used more and more widely.

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