Research on Intelligent Processing Technology of Computer Image Recognition Based on Machine Vision

Ying Wei1,*, Yuejuan Huang1 and Na Zhang1
1Harbin Huade University, Harbin, China

*Corresponding author e-mail: weiyi@nepu.edu.cn

Abstract. Although computer image recognition can distinguish very clear images, it is only limited to a certain number of years. Or it can only be clearly distinguishable from some range of graphs, and expanding the range or changing the range will not achieve the state that people want it to achieve. Nowadays, China's equipment in this field can only conduct activity research in the two-dimensional space, and can only decompose and analyze the two-dimensional pictures. For high-dimensional and complex graphs, they still cannot be processed and the processing requirements are not up to standard. Moreover, the development of this technology is also affected by many human factors. The operation and implementation of this technology mainly rely on the high-energy and powerful processing power of the big data computing system. If we want to ensure the quality of image processing is very good, we must closely combine the recognition image and the related technology of the computer, and do not separate from each other. In this paper, the development of the technology from the status quo, the development of the principle and characteristics of the development of the technology for an in-depth study of the technology, but also the development prospect of the technology is described.

Keywords: Computer Image Recognition, Intelligent Processing Technology

1. Introduction

Compared with the past, because we are exposed to a lot of things, those things contain a lot of information. Therefore, in our daily life, work and study, we usually need to collect and analyze a large amount of information. Based on the technology discussed in this paper, we can help people get information more quickly [1]. After analyzing the characteristics of the image by computer, we can find out what we want to find out. In the past, when people wanted to gather information, they had to aggregate what they actually saw and pass it on by word of mouth. People can only tell what a thing is if someone has seen it. The development of modern science and technology makes the identification of objects no longer depend on what the human eye sees, but also can be used to screen. The technology can be even better, because the information extracted from the images is objective and more accurate than the human eye. This technology has been developed step by step in our country's aerospace industry, industrial manufacturing, medical tools and many other fields, and has been recognized by people.
2. The state of the art

Although now, our country's technical means in the field of application, practicability is very high, and has made some good results, but our country's research on it is not deep enough, the application is still in a relatively shallow place. Therefore, its application and research are still in the primary stage. At present, this technology can only identify some simple pictures. The development of computers and electronic information is not advanced enough [2]. Due to their limitations, the ability of intelligent image recognition is still weak. Insufficiency is mainly reflected in the following aspects. (figure 1)

![Figure 1. Development of image recognition technology](image)

2.1. The effects of equipment limitations

The technique can distinguish very clear images, but is limited to a few years. Or it can only be clearly distinguishable from some range of graphs, and expanding the range or changing the range will not achieve the state that people want it to achieve. There are two reasons for this problem. The first is that the computer's configuration can't keep up with the demand, and it can't afford the computing speed and intensive reading required by the technology. The second is that the picture presented by the image describes things that are too complicated or too large to be calculated by the computer. In turn, it will directly affect the long time and inaccurate analysis of the result of graph analysis and processing. Compared with foreign countries, or just look at the computer equipment in our country is unable to meet the requirements of this technology. Therefore, if China wants to develop this technology well enough, it is very necessary to rely on foreign equipment. If domestic equipment cannot be used, it can only import equipment from other countries [3]. This will lead to domestic development of their own technology, but also contribute to the foreign capital. And then our country has been unable to match those developed countries in this technology.

2.2. Human factors

Nowadays, China's equipment in this field can only conduct activity research in the two-dimensional space, and can only decompose and analyze the two-dimensional pictures. For high-dimensional and complex graphs, substandard conditions still exist in the processing process. Moreover, the development of this technology is also affected by many human factors. Therefore, when we study how to get the development of this technology, we must maximize the use of computers to do all the work, reduce the participation of people, and prevent human factors from affecting the results of the analysis. Using network to calculate can improve the level of intelligence of technology, combined with accurate cognition will be able to accurately identify and classify more complex and difficult graphs.

3. Fundamental principle of image recognition technology

The operation and implementation of this technology mainly rely on the high-energy and powerful processing power of the big data computing system. If we want to ensure the quality of image processing is very good, we must closely combine the recognition image and the related technology of the computer, and do not separate from each other. For example, if the technology used to identify images can be used in the transmission of information in the machine of low illumination processing means, it can improve the accuracy of image processing and extraction of information, but also can
greatly shorten the time spent in the whole process. If this method is put into the scope of surveillance work, it can also improve the clarity of surveillance video equipment. This technology will reduce most of the noise that is not useful, especially the noise that is not related to the resolution of the image [4-5]. It can also reduce the impact of other external factors on people's work when processing images. Use technology to enhance the ability of anti-interference and reduce the negative impact of unnecessary or confusing factors on the authenticity of the image formation. In modern society, the departments or enterprises that use this technology mainly use neural network method, analytical structure method, statistical method and so on to support the intelligent technology of image identification. And these three methods will develop when they are used and each of them has its own advantages and disadvantages. So you have to look at what kind of features the image has, and then you have to choose which way you can manipulate it. At present, the information contained in a picture tends to be more and more complex, so it requires the personnel engaged in relevant work to use more intelligent methods to achieve image processing and ensure the work. Want to meet the above requirements is not difficult, as long as according to the different image, establish and improve some mathematical models can meet the requirements. The corresponding model is used to calculate the various elements in the image, and then the powerful data analysis and information processing ability of the big data network is used to find the distribution rules of the elements in the image. In this way, the technology of intelligent image analysis by computer can be applied to more fields to meet people's more and more diversified needs.

4. The characteristics of intelligent image recognition technology

4.1. Digital processing
In the recognition of the image to transform the image into a two-dimensional digital combination, so want to achieve the image recognition technology in the intensive reading random conversion must use the computer intelligent digital processing. Now this technology in the precision of reading and processing this aspect has been greatly improved, so that the computer can make the picture more delicate when processing images [6]. After using this technology, people will have more space and room to create new things when arranging pictures, and enlarge the things people want to get in the pictures according to the requirements, so that people can more clearly feel the information presented in the pictures. According to this feature of image processing technology, this technology can be used in the level of higher precision to distinguish cell map.

4.2. Logical processing
The recognition ability of this technology can also be improved by processing the image mathematically in both linear and nonlinear terms. It can not only present the contents contained in the picture completely, but also greatly compress the working time [7-8]. After all the processing work is completed, the computer will further process the data processed by the image, transform the data into two-dimensional data, and then arrange and combine them in different ways according to the needs. This work is not completed until the whole image looks clear. (figure 2)

![Figure 2. Characteristics of intelligent image recognition technology](image-url)
5. The application prospect of computer image recognition technology

The hardware system in the computer benefited from the modern technology also has the very big development and the progress. So the focus of this technology has gradually shifted to improving the speed of recognition. How to extract the problems reflected in the pictures more quickly is now an important concern of researchers. Hardware has improved, so the information processing power of computers has improved a lot. There has been unprecedented success in data consolidation and compression. Then speed is guaranteed, people are more likely to pursue more things. On this basis, the future will develop how to meet the needs of image resolution of the individual technical methods. Image processing work from the current two-dimensional to a higher level of development and progress, and even let the processing means multi-dimensional development at the same time. For example, the archaeology major in China can use this technology to model and process the tomb maps in reality so that students can learn more conveniently. It will also make it easier for archaeologists to excavate and analyze and demonstrate cultural relics. And now we can find the shadow of this technology in many business fields, companies also use this technology for employee attendance, fire tunnel construction management also use this technology.

Although this technology seems to have been applied to many fields, it has made great achievements in theory. But the technology is still in its infancy. Such a situation requires the relevant government departments of our country to increase investment in this technology and encourage them to continue research and development in multiple directions [9-10]. Let our country's technological means more advanced, break through more unfamiliar fields. Although the technology at present in our country to solve the traditional image acquisition and processing the defects existing in the work, also reduces the external environmental factors and the effects of various noise on image recognition processing, but now people in the society demand for high definition, high quality image has been increasing, so the technology will have a very broad prospects for development, It will be used in all fields.

6. Conclusion

It is the objective need of the development of image recognition to acquire the image information and collect the required information. Developing smarter ways to access information and reducing reliance on human vision are subjective factors in the development of this technology. Now, the technology has taken off, and has gained market demand in many industries, but it still needs to be improved, so that it can officially enter the group of multiple fields. In this paper, the development of the technology from the status quo, the development of the principle and characteristics of the development of the technology for an in-depth study of the technology, but also the development prospect of the technology is described.

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