

The Simple Description of the Current Monitoring Video Structure Problem

Renyun Jin, Sihao Chen, Liguu Weng*, Haifeng Qiu

State Grid Zhejiang Hangzhou Xiaoshan District Power Supply Co., Ltd., Hangzhou, 310000, China

Abstract: Currently, video data transmitted over the Internet accounts for approximately 70% of network traffic. It is no exaggeration to say that video data is the largest data in the era of big data. How to make computers better understand and observe the world in front of us is not a simple problem. In recent years, it also has been a hot spot in computer vision research. To this end, this paper discusses the monitoring video structural analysis problem and system design implementation for reference.

Keywords: Monitor video; Structured analysis; System design

1. Introduction

When it comes to the Video surveillance system, which is an important part of intelligent city, intelligent security and intelligent transportation. It is of great value for the research of structured analysis technology of video surveillance. The challenges faced by current video structuring analysis in China mainly come from the effective extraction of video information, data interaction between information systems and semantic operations. Therefore, the monitoring video structuring method which uses the computer vision technology as the core to make the video surveillance system intelligent and semantic appeared in the worldwide [1].

2. Video Surveillance System Overview

Video surveillance systems, access control systems, face recognition, license plate recognition systems and high-altitude parabolic detection systems are the main research and production contents in the current security market, with the largest market for video surveillance systems. Video surveillance system is an important part of a smart city and a safe community [2]. However, since the video surveillance system currently on the market generally only implements a single data collection function, it needs to be manually judged when commanding and dispatching, which takes a lot of manpower. The video surveillance system sold on the market cannot extract effectively structured information from the video, and cannot manage and retrieve the video data. Although some smart cameras have added some simple traditional video analysis methods for analysis the objects appearing in the video, they are limited by the performance of traditional algorithms.

3. Currently, There are Some Problems in Video Surveillance Systems

First of all, there is a lack of effective video structured analysis methods which means that it can not effectively assist police officers in detecting and solving cases which are based on the information in the analysis video and community security personnel to prevent the occurrence of cases. Although the current video surveillance system has been widely used in security management, it still mainly rely on manual to watch and check when it is needed.

In addition, the video surveillance system is difficult to keep the balance of clear and wide viewing. The human's eyes can see the face dozens of meters away, while the ordinary camera can only recognize the face within 3 to 5 meters. Since most of the visual cells are gathered in the fovea of the human eyes, the human eye obtains a very high resolution for the target of interest by adjusting the fovea. Currently, a coordinated remote capture of the working principle of the human eye is used to solve this problem.

Thirdly, there is a lack of standardized generation methods for video information intelligence, and there is a lack of new information using video information to guide investigation and solve crimes. Type of police work mode. Now the application of video surveillance has been integrated the daily handling of the police, but the people still use the way to work, to browse, check, time and effort.

Finally, the structure of the surveillance video command and dispatch center is rather in a mess. It often displays different surveillance camera images from multiple screens. In the command and dispatch process, people often do not have a good sense of both sight and immersive view. It is difficult to visualize the global and local details at the same time, which makes it hard for the duty leader to grasp the overall situation and command and dispatch.

4. Monitoring Video Structure Analysis and System Implementation

The monitoring video structured analysis is a technology for extracting and describing the semantic information of surveillance video. To make a deep learning for video structural analysis, the target detection, multi-target tracking, target feature refinement and the information standardization description are required so that the semantic analysis on the video content can be converted and analyzed and the image information content of the video can be changed into an accurate description of the video information in order to retrieve and compress the semantic text information and convert it into information for command and dispatch [3].

Here, we can use the following methods to achieve institutionalized analysis of surveillance video:

The computer vision method of deep learning can be used to replace the traditional computer vision method in order to overcome the problem of target detection, target refinement recognition and image retrieval. The computer vision method based on deep learning has achieved excellent results in many academic competitions, which is currently one of the best technologies for solving video structured analysis.

Use the design database storage methods and research application design key functions of database management technology, image retrieval methods and database service technology.

Design augmented reality camera, with the high point of the community as the node, the high point of the area as the center, the monitoring points are connected to each other to realize the real-time annotation of important information on the monitoring image. The GPS position of the patrol personnel is mapped to the monitoring screen in real time, which is convenient for the duty leader to control the overall situation in directing the dispatch.

By using the radio Doppler effect, the echo signal of the radio is used to replace the traditional computer vision-based sensing method to solve the difficulties in computer computing research and sense the moment when high-altitude parabola occurs. Auxiliary binocular computer vision positioning method is to confirm the high-altitude parabolic window.

5. Monitoring Video Structuring Technology Application Prospects

Video structuring technology is a new thing, probably in 2010. Due to the prevalence of high-definition storms at that time, intelligence became the most important technology application for the next generation of manufacturers, but they found that for single or few channels of monitoring data, some video-concentration problems can be solved through intelligent video analysis, but in the safe city Construction, video surveillance should be

shared by the network, so video data will be more and more, how to use these massive video information resources efficiently, can solve some monitoring problems in real time, or in some case detection, can be rapid Finding the information you need to know will require some new technology to meet the requirements. Video structuring technology was born in this context.

Video structuring technology firmly grasps the main line of video content information processing and networked sharing applications. The industry strives to fully realize the intelligence of surveillance video information and the intelligence of video surveillance network after ten years of technical research and system construction. The universality of police video applications. That is to realize the processing and analysis of video information based on machine automatic processing, and transform it into information available for public security work through technical means; realize information sharing and active interoperation between monitoring networks, between terminals, and between police types, and realize Active monitoring, automatic network analysis and other network functions; comprehensively expand the application mode of video in police work, greatly improve the ease of use of technology, and realize flexible, simple and diverse video presses centered on the business police Service application is required.

In addition to the public security industry, the application scenarios of video structuring technology can also be deployed in intelligent transportation. At present, the application requirements and frequency of the electric police bayonet on the map detection have long surpassed the traffic police, because the case basically has to contact the vehicle, which can find a lot of clues. The bayonet electric police's capture angle of the vehicle is relatively fixed, and the corresponding vehicle feature recognition technology can be developed. The electric police bayonet belongs to, a good matching point for business requirements and technical realization.

This is the application reserve of video structuring. Some domestic manufacturers have developed cameras that can break through the limitations of planar image features and obtain more accurate three-dimensional information, such as the number of human bodies, height, and length of objects. To this end, people's valuable information mining in surveillance video is not only limited to the basic information of current vehicles and people. Under the continuous promotion of the application market, it can continuously supplement the key information extracted by video structure, which is the final big data platforms provide a more valuable data population.

6. Conclusion

The latest research content in the field includes video data processing, information extraction and the description of the monitoring of video content information. Ac-

ording to the video structured information, the behavior of the object of interest is analyzed and understood, then the semantic information of different scales and levels is generated to monitor video analysis and semantic understanding of the scene. In addition, in order to better meet the needs of the actual video structuring projects that can be seen clearly and far-sighted, we can design and manufacture a special remote camera, which means to develop augmented reality AI high-point stereo cloud platform and the high-altitude parabolic detection system based on the radio Doppler.

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