

Design of Farm Livestock Manure Resource Management Platform Based on Intelligent Semantic Analysis of Real-Time Monitoring Images

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Abstract: With the rapid development of big data and 5G communication, the management of agricultural and livestock manure resources in rural areas has also embarked on a high-tech monitoring and platform design route. First, starting from the impact of pig manure on the environment, it analyzes how to use real-time monitoring images to semantically analyze the management and resource utilization of pig manure. According to the needs of building an intelligent behavior analysis system for agricultural storage ponds, first of all, establish a system that can not only express the purpose of use by farmers, but It can also express the direction of the construction of modern rural areas. Finally, based on the target positioning, identification and tracking in the dynamic scene, the deep processing and comprehensive development and utilization of feces are carried out, and the environmental management and resource development are combined. The results show that: from the current situation, the resource utilization of chicken manure mainly has two aspects, one is as feed, the other is as fertilizer; the resource utilization of pig manure and cow manure is suitable for chemical fertilizer utilization.

Keywords: Farm Livestock Manure, Resource Management Platform, Intelligent Semantic Analysis, Real-Time Monitoring Images

1. INTRODUCTION

The farm adopts the mechanical manure removal process. The livestock and poultry waste are scraped into the collection tank through the manure scraper, and then enters the self-built biogas plant. The biogas is fermented and processed by the biogas equipment [1]. The biogas is used for power generation. The biogas residue is dried and used as bedding. The liquid is used for returning to the field, and the livestock and poultry manure is zero-discharged. In the current field of aquaculture in my country, great attention is paid to the issue of aquaculture management [2], which is not only reflected in scientific feed management and disease prevention, but also in strengthening the hygiene management of aquaculture, which has the characteristics of comprehensive nutrition, long fertilizer efficiency, and easy absorption by crops. It has significant effects on improving crop yield, quality, disease prevention and stress resistance, and soil improvement [3].

Today, when more and more attention is paid to sustainable development, the first task is to update the concept of the whole society. In the process of pig breeding, many large-scale farms use advanced technology to process pig manure [4]. Image semantic segmentation refers to the Image segmentation technology that classifies the semantic content expressed by each pixel in the image [5]. The key technology of intelligent video surveillance focuses on the analysis and processing of video content. At present, in most cases, the monitoring system only acts as a video recording function, and after an abnormal event occurs, it is replayed for manual analysis [6].

Used by video surveillance cameras. In particular, the DAVINCI dual-core architecture DSP chip launched by TI (Texas Instrument) in the United States can not only meet the basic functions of video data encoding and compression in video surveillance systems [7], web server embedding, etc. With the development, the number of ATM automatic teller

machines is increasing, which not only facilitates people's work and activates the financial market, but also brings more and more criminal cases [8], including peeping passwords, installing external card swallowing devices, using plastic sheets animal husbandry is the leading industry for farmers in Yichang City to increase their income and become rich [9]. The main leaders of Yichang Municipal Party Committee and Municipal Government attach great importance to the resource utilization of livestock and poultry breeding waste [10].

One of the most basic techniques for video content analysis is the foreground object segmentation of video and key frame images [11]. Current interactive video and image set segmentation algorithms greatly simplify the task of image object foreground segmentation. However, the previous interactive video and image set segmentation algorithms generally only involve the operation of a single image or a single video sequence. First, heavy metal pollution [12].

Under the background of the rapid development of the breeding industry, my country's feed production and processing industry has also been well developed, so as to meet the various nutrient needs of pigs [13]. However, some pig feeds contain copper, iron, zinc and other metal elements exceeding the standard Situation. To strengthen people's understanding of the resource utilization of agricultural waste [14], due to the poor scene understanding and work efficiency of traditional semantic segmentation methods in unstructured complex environments, the problem of semantic segmentation for complex environments has become a research hotspot in recent years. Fully recognize the economic, environmental and social value of comprehensive utilization of agricultural waste [15].

Recognizing that the resource utilization of agricultural waste is an important aspect of sustainable development. Break through the traditional concepts of resources and waste.

Among them, "intelligence" refers to the automatic identification and tracking of scenes, pedestrians [16], vehicles and other targets through multiple network cameras, and identification and extraction of complex behaviors and events from massive video recordings. Decision makers use and query [17]. In the mid-1980s, the birth of analog optical transceivers and the practical application of optical fibers made high-quality, long-distance video signal transmission a reality. At the same time, analog video signals can also be wirelessly transmitted by carrying high-frequency microwaves [18].

2. THE PROPOSED METHODOLOGY

2.1 The Intelligent Semantic Analysis of Real-Time Monitoring Images

The effect of image semantic segmentation is directly related to the accuracy of the unmanned system's understanding of the scene. At present, deep learning technology has made gratifying progress in the field of image semantic segmentation, but the complex environment is unstructured, so a key technology to establish an intelligent behavior recognition and analysis system is to integrate semantic and statistical information. DirectShow-based video data collection and playback. Firstly, the construction of Filter Graph for video capture is mainly introduced, and the open-source video compression Filter is used for MPEG in DirectShow.

Visual perception processing is at the underlying feature layer, which mainly refers to the extraction of underlying features of some concerned objects, such as color, shape, texture, and spatial location information. This paper studies the all-round intelligent monitoring of ATM machines. The research scenario is the surrounding environment of the ATM machine. Secondly, it introduces the operation of video playback on video streams: pause, play, capture and save images. Semantic information means that the system must provide a visual It uses a set of graphical semantic symbols to express the user according to different scenarios. In essence, we create spatiotemporal lens graphs to represent multi-view video. This representation takes into account the relationship between multi-view videos. Event-centered clusters are obtained through random walk and multi-objective optimization algorithms. These clusters finally form multi-view summary results. The adaptability to illumination and seasonal changes in complex environments is not strong, and the robustness is poor.

2.2 The Resource Utilization of Livestock Manure in Farms

Pig manure is mainly due to the high-water content, so it is difficult to handle. In the process of resource utilization, a sewage fertilizer model can be created to solve the problem of difficult governance. At present, this method is widely used in many areas. been promoted.

It can be seen that the AND or graph actually defines a random context-dependent grammar, which is used to represent the image grammar, where VT is its dictionary, and VN represents its generation rules. The video surveillance system will generate massive video data, which requires a lot of storage media to save data, in order to save costs, it is very necessary to adopt video encoding for video data, so in this paper, the MPEG-4 encoding algorithm in DivX is used. Withdrawal status and withdrawal status are identified based on the selection of identification points, distance changes and face circumference changes. It has innovatively promoted

three major technology models for resource utilization of livestock and poultry manure, including the sewage and fertilizer utilization mode of full-volume collection and treatment and returning to the field nearby, the specialized energy utilization mode of manure combined with agriculture and animal husbandry, and the biological fermentation bed mode. It is guaranteed that each farm can find its own "one policy, one policy" governance model. Specifically, anaerobic fermentation of biogas can be achieved after using the sewage discharge mode that meets the standard, and then it can be directly used in the fertilization of farmland and irrigation of farmland, so as to achieve the goal of fertilizer and water resources. After the chicken manure is dried at high temperature, it can not only achieve the required moisture, but also achieve the purpose of disinfection, sterilization and deodorization.

The content of harmful substances leads and arsenic in the dried chicken manure is 25mg/kg and 8mg/kg respectively, which is less than the international regulation and no more than 30mg/kg. The traditional image semantic segmentation method uses shallow visual features to segment the image target, and then uses manual annotation. semantic information to complete image understanding tasks. For the video on the left in the figure, identify and track the objects of interest (pedestrians, vehicles), so that in the (x, y, t) coordinate system, the corresponding motion trajectory can be obtained to compact the leadership responsibility of the government's territorial organization, establish a territorial responsibility system with overall coordination at the municipal level, counties as the main body, and township governments organized and implemented. Consolidate the responsibilities of departmental supervision services, cooperate closely with the Yichang Ecological Environment Bureau, implement the linkage of law enforcement supervision and technical guidance services, and jointly promote the orderly progress of the work.

2.3 The Design of Livestock Manure Resource Management Platform

ow to accurately achieve target semantic segmentation in complex environments is the focus and difficulty of current research. The FCN model initially achieved pixel-level semantic segmentation, pushing the accuracy of image semantic segmentation to a new height, which is one of the landmark achievements in this direction, and provides the possibility for accurate semantic segmentation in complex environments. The system enumerates the attributes of the camera, including DisplayName, FriendlyName, DevicePath, etc.

In this application, the attribute FriendlyName is specially displayed in an edit box control, and the system can automatically create a SourceFilter for video capture. Secondly, use the change of the distance between the human body and the ODVS and the change of the circumference of the face to confirm the i process, the state of withdrawing money is a process of reducing the distance and the perimeter of the face becoming larger, and the state of withdrawing money is a process of no obvious distance change and the perimeter of the face is basically unchanged. Provincial project funds are 263 million yuan. The municipal finance department allocates 5 million yuan each year to support the resource utilization of livestock and poultry breeding waste. Give full play to the guiding role of inclusive finance in animal husbandry to increase credit, and give priority to supporting loan projects for resource utilization of livestock and poultry waste.

3. CONCLUSIONS

This paper mainly expounds image semantic segmentation methods for complex environments, introduces the challenges faced by semantic segmentation tasks in complex environments, as well as traditional image semantic segmentation methods and deep learning-based semantic segmentation methods. In the future, it is necessary to innovate the planting model and strengthen the system build and develop manure treatment technology, rationally distribute planting and breeding models, and strengthen technology promotion, so as to reduce the damage to the ecological environment and realize the rational use of resources. In addition, various regions also need to formulate special subsidy measures. Establish a unified knowledge expression and model that can express both high-level user semantics and ever-changing scene and object statistical information, and use machine learning methods to improve this unified model. Structure and Parameters.

4. REFERENCES

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