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Online Analysis Algorithm of Hainan Characteristic Tourism Industry Structure Analysis Platform Based on Real-Time Acquisition Cloud Network System

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Abstract:This paper proposes an anomaly detection model based on deep belief network ensemble learning. The model solves the problem of unbalanced positive and negative samples of multi-source operation and maintenance data, and at the same time uses the good feature extraction function of the deep belief network. Under the Markov assumption, the least squares method is used to establish a mathematical model to obtain the 2019-2027 year of Sanya City. The orderly degree of tourism industry structure. The numerical experiment results show that the order degree of Sanya's tourism industry structure is increasing year by year. However, economic fluctuations are not a significant factor affecting the evolution of the industrial structure, and there is no obvious mutual feedback relationship between the two. It is proposed to build a characteristic industrial structure system that adapts to the construction of an international tourism island.

Keywords: Online Analysis Algorithm, Hainan Characteristic Tourism, Tourism Industry Structure, Real-Time Acquisition Cloud

1. INTRODUCTION

CCD (Charge Coupled Device) image sensor is a high-performance solid-state imaging device, which converts optical signals into electrical signals [1], and is widely used in image acquisition systems and measurement and detection systems. It has the advantages of wide spectral response, good linearity, wide dynamic range, low noise [2], high sensitivity and real-time transmission. The data acquisition system composed of a single-board microcomputer completes the detection and processing of the five main powers of the rectifier, and indirectly calculates a parameter [3], prints, records, and displays the average value of each important data in real time user [4].

With the rapid development of information technology, the data acquisition system is gradually developing towards the trend of high speed [5], long distance and networking. The traditional data acquisition system using a special acquisition card has been difficult to meet the needs of the acquisition site. The emergence of industrial Ethernet has greatly promoted the development of data acquisition technology [6]. At present, there are many methods to study the structure of tourism industry. Su Linning et al. used grey system theory to study the correlation degree of tourism industry structure. The grey relational analysis method is the most common method to study the structure of tourism industry [7], and there are many related literatures. Yang Xinjun et al. used the deviation-share analysis method (SSM) to evaluate the advantages and disadvantages of the regional tourism industry structure and the strength of its own competitiveness [8].

Modern economic growth is essentially based on the industrial structure [9]. Practice has proved that the adjustment of industrial structure is closely related to economic growth. Economic growth will inevitably lead to the adjustment of economic structure [10]. The adjustment of economic structure requires the matching industrial structure. Structural adjustment presents a spiral relationship of "growth-adjustment-growth". With the continuous improvement of my country's economic situation, residents' income has grown steadily [11], and the demand for rural tourism products and services with leisure as the main purpose is also increasing. Regions rich in tourism resources have keenly captured this information. Taking Hainan Province as an example, Hainan proposed to develop rural tourism and leisure agriculture as early as 2010 [12], and proposed to build 100 demonstration sites for leisure agriculture and 100 sightseeing orchards. From the perspective of cloud computing, cloud computing realizes resource [13] follow-up and business on-demand through software-defined methods. In short, the development of cloud computing services requires the support of strong network capabilities [14], and the optimization of network resources also needs to learn from the concept of cloud computing. Therefore, cloud-network integration is an inevitable trend in the development of cloud computing technology [15].

In order to acquire color images with area array CCD, the following two methods can be adopted [16]. (1) Let the light split into three colors, red, green, and blue through a special prism, and then use three CCDs to receive one of the colors and convert them into electrical signals [17]. The EtherCAT Ethernet bus technology is currently a relatively advanced industrial Fieldbus technology can not only meet the requirements of high speed [18], large amount of information and real-time in industrial control, but also has the characteristics of simplicity, flexibility and openness, and has been widely used in the industrial control industry [19]. The tourism industry is a very important part of the whole national economy industry, and the research methods applicable to the industrial structure [20] of the national economy are also applicable to the study of the tourism industry structure to a certain extent. Some of the above-mentioned research methods also fully reflect this point [21].

Kuznets and Chenery and others believe that the growth of the total economic volume depends on the transformation of the structure [22]. Under certain conditions, the higher the transformation rate of the industrial structure, the faster the growth of the total economic volume [23]. In 2016, Hainan

Province proposed to carry out the "Beautiful Hainan 100 Towns and 1000 Villages" project, attaching great importance to the transformation and upgrading of the rural tourism industry. Multi-source data collection based on OpenStack and OpenDaylight [24] cloud-network integration environment mainly faces challenges such as wide monitoring level, multiple data sources, and dynamic scalability of cloud computing. The main challenge for the comprehensive analysis of the collected data is to analyze the correlation rules between the time series collected data through algorithms.

2. THE PROPOSED METHODOLOGY

2.1 The Real-Time Collection Cloud Network System

On January 2, 2018, the "Opinions of the State Council on Implementing the Rural Revitalization Strategy" officially Released, the revitalization of the rural economy has been officially elevated to the level of the national strategy. Hainan Province has formulated detailed rules for the development of the rural economy based on its own actual conditions.

Choosing a good color interpolation method is very important to obtain high-quality images. The more complex the selection method, the higher the quality of the image produced by the interpolation, but the data processing time required is very long, and it is difficult to implement complex algorithms with hardware. The user can press the "minute average key" on the instrument at any time to obtain the printed result of the current minute average value of this power. The four-digit digital tube on the panel exchanges and displays the current average value of the voltage and current output by the rectifier at minute intervals. The system is mainly composed of a PC master station, multiple EtherCAT slave stations, multiple sensors and communication medium. As shown in Figure 1, the acquisition process is as follows: the master station device sends an EtherCAT downlink message to each slave station, when the message passes through each slave station. OpenStack provides an Infrastructure as a Service (IaaS) solution through a variety of complementary component services, each of which provides an API for integration.

It virtualizes a large machine into many small machines so that the large ones are divided into small ones for use, which greatly improves the resource utilization rate. Service providers need to monitor the various virtual resources provided by the cloud platform to users in real time to ensure the reliability and stability of services. In order to reduce the interpolation operation time and facilitate hardware implementation, the bilinear mean algorithm is the optimal choice, but this algorithm will cause blurred edges. In this paper, an improved bilinear interpolation algorithm is used, which takes the correlation into account when interpolating the R and B signals. The slave station parses the EtherCAT message.

2.2 The Hainan Characteristic Tourism Industry Structure Analysis Platform

If the message is addressed to the slave station, it will read the corresponding data or write the data to the location specified by the message, and at the same time, the work counter will increase by 1, indicating that the message has been sent from the slave station. station processing. When the last slave has processed the message, the message starts to return.

The optimization research of tourism industry structure often needs quantitative analysis, and high-quality tourism statistical data is the basis to ensure accurate quantitative research. Restricted by my country's current tourism statistics system and tourism statistics management level, it is almost impossible to directly obtain relevant data. The rural tourism industry is formed with rural resources as the core. Most of the service personnel absorb the surplus labor force of the local villages, resulting in the low cultural level and low overall quality of the employees, and many rural bad habits are brought into the tourism service. Therefore, It is necessary to introduce a new concept of relevant quantification-order degree on the basis of the existing tourism statistics. Since Hainan was established as a province, the industrial structure has been continuously adjusted. In order to reveal the quantitative relationship between some relevant data, find out Its inherent laws often require data fitting work. The basic and important data fitting method is the least squares method.

Least squares is an optimization method that finds the best functional match for the data by minimizing the sum of squares of errors.

2.3 The Research on Online Analysis Algorithm of Hainan Characteristic Tourism Industry Structure Analysis Platform

Tourism refers to a comprehensive service industry that uses tourism resources and tourism facilities to provide tourists with transportation, tours, accommodation, meals, shopping, entertainment and other links. The employment structure mode of the three industries in Hainan Province is one, three, two, and the mode of labor transfer is the mode of retreating one and entering three. Practitioners are mainly in the primary industry. In a broad sense, tourism shopping refers to all the behaviors of tourists, such as visits, tours, entertainment, etc.

According to common sense, the development and transfer cycle of various industries in the tourism industry is long, and the state of the tourism industry structure is considered to be only related to the current state, not the previous state. The traditional marketing methods of Hainan rural tourism enterprises are inefficient. And the effect is not good. With the help of the smart tourism platform, it is possible to deeply mine the information data of tourists in the travel itinerary. First, according to the EasyEnsemble sampling idea, random sampling is performed from the majority class of the dataset to generate multiple majority class subsets, which are combined with the minority class respectively. for multiple sub-training sets. Then each sub-training set is separately input into the deep belief network for feature extraction. So as to locate the target market and implement precise marketing.

That is to say, the change process of the tourism industry structure has no aftereffect, so it satisfies the conditions of the Markov hypothesis, which can be used to quantitatively analyze it. and all other interrupts are masked. When returning to the Windows context, the non-INtime interrupt will be unmasked so that it can be handled normally by Windows. Based on the consumption level of the tourist group fed back by the smart tourism service system, the Open-Falcon component Agent is installed on each virtual machine. In addition, vm1 installs the corresponding server components, including the Transfer component, the Graph component, the API component, and the Dashboard component. and Hbs components. Finally, make the necessary configuration and start the corresponding components. Consumer characteristics, consumer preferences and other information, subdivide the tourist market, position your own products

according to the needs of tourists, and communicate in a timely manner, which can effectively improve benefits.

3. CONCLUSIONS

Study the fusion technology of OpenStack and OpenDaylight, and based on the detailed understanding of the cloud-network fusion organizational structure, abstract the data collection requirements in this environment, and compare the advantages and disadvantages of the existing data collection tools. A mathematical model of least squares method was established to study the order degree of tourism industry structure in Sanya. The research results show that the optimization of the tourism industry structure is a systematic project, and it is extremely important to promote the optimization of the system in order to make the tourism industry structure of Sanya develop healthily, orderly and rapidly.

4. ACKNOWLEDGEMENT

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