Scale Space Mining Algorithm for Big Data Filial Culture Image Processing

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Abstract: With the rapid development of technologies such as the Internet, cloud computing, Internet of Things and big data, as well as the proliferation of tens of thousands of network access points, mobile terminals and network applications, high-value big data has been generated. Cyberspace security brings unprecedented challenges. The image culture of the dutiful son is one of China's fine traditional culture, but it has gradually weakened in the modern era. The country is looking forward to the filial piety culture in the new media era, and the image with filial piety can maintain vitality. The transformation of reality and innovation has made filial piety a reality. Through filial image processing and vectorization, this paper performs word vectorization on word traffic corpus big data to realize intelligent detection of big data cross-site scripting attacks. Image processing methods are used for data acquisition, feature extraction and other data preprocessing. The experimental results show that the mining algorithm based on anisotropic wavelet filial culture image space can be used for hierarchical differential detection.

1. Introduction

In recent years, the material life of the people has been rich, and the non-mainstream culture has occupied the entire spiritual life of the people. The traditional Chinese virtues as a mainstream culture have been challenged and influenced. In the face of the decline of social morality, the government advocates the inheritance and promotion of traditional culture in order to produce a huge social and cultural reversal. How to deal with this cultural issue has also caused extensive academic debate [1, 2]. At the same time, issues such as filial piety and digital communication have become increasingly prominent, causing widespread concern and becoming a hot spot of concern to all sectors of society [3-5]. The strategic significance of big data technology is not to master a large amount of data information, but to make these meaningful data special [6-10]. The processing of big data can be divided into stream processing and batch processing [11]. Multi-scale analysis methods bring new solutions to spatial analysis, target path tracking, and other areas or tasks [12-14]. Traditional conventional data processing techniques cannot cope, and big data brings many practical problems. Based on the basic theoretical problems of big data mining and multi-scale spatial analysis, this paper proposes a specific operational big data scale space mining and fusion analysis method. According to the image similarity of the image of Xiao culture, the spatial diffusion equation of large-scale nonlinear scale is derived. The anisotropic direction-adjusted wavelet is used as the filial piety culture image function to construct an anisotropic big data nonlinear scale space. The isotropic Gaussian kernel function is used to construct the nonlinear scale space of isotropic big data. An anisotropic feature mining algorithm is designed with this space as the core.

2. The Meaning of Filial Piety and the Traditional Expression of Images

As the essence of the spiritual civilization of the Chinese nation, filial piety culture has produced a profound imprint on the national characteristics and national culture of the Chinese nation through various material media and image communication. Filial piety culture and socialist core values are the dominant ideas in the moral concepts of ancient and modern society. There is something in common between the two. Filial piety culture has many places to learn in terms of cultural exchanges. In the sense of filial piety, the Chinese nation firmly believes that filial piety has been

the basic principle for maintaining the order of young people and the elderly since ancient times. It is an ethical norm, a concrete manifestation of "benevolence" and a means of beautifying the political atmosphere. At the same time, people also believe that filial piety is the highest moral expression in life. Filial piety has become an important condition of kingship, and dutiful son is the only meaningful role in life. After Confucius and Mencius, the filial piety thought gradually evolved into meaning, loyalty and status through the filial piety. In fact, even among other ethnic groups other than the Chinese nation, Hegel also believes that pure architecture in China is a combination of filial piety and morality, and the state is characterized by objective family filial piety. Therefore, the influence of Chinese filial piety on the country and the nation has been fully emphasized.

In modern times, although the study of filial piety still focuses on the research and traditional teaching of filial piety, the current art image argumentation and research on the current mode of communication are far from enough, but the unique culture of the Chinese nation is the Chinese nation. The form is still full of expectations. This year, the academic community has put forward many meaningful insights into the use of filial piety culture. Although there is a clear lack of in-depth discussion and interpretation of current reading and reading and the application and dissemination of digital models. Filial piety culture is a way of exploring Chinese history and culture, and it is the embodiment of the development of Chinese culture and thought. "Ritual" and "le" are the externalization of human inner feelings. Filial piety is an important part of Confucian ethics, which is reflected by these two cultural symbols. It also uses body communication as the main body to express the connotation of "filial piety." Initially, the architectural ceremonies of the official tomb were mostly used as the main form. At the same time, many original ruins, bronze and Han portraitstone images more reflect the understanding of traditional filial piety in that era. Even if contemporary culture bids farewell to the "language turn" and enters a new phase of "image turn," filial piety will inevitably spread through digital technology. At present, although there are not many studies on the dissemination of filial piety symbols in Chinese digital technology, there is an increasing discussion about the relationship between filial piety culture and the unique forms of images and digital age.

3. Big Data Scale Spatial Fusion Analysis Algorithm

The ideal multi-scale spatial association rule is that as the spatial data changes in multiple scales, the spatial association rules will gradually change automatically. Spatial association rules using only the largest scale data are automatically analyzed based on the multi-scale relationship between the data and certain rules. Calculate and combine spatial association rules for basic data to generate spatial rules for small-scale data. Multi-scale spatial data recording from fine to coarse multi-scale or multi-resolution geometric transformation processes. The smaller the scale, the more refined and microscopic the expression of the spatial target. The larger the scale, the more general and macroscopic the expression of spatial targets. According to the structure of the nonlinear scale spatial diffusion equation of the dutiful image, the anisotropic filial piety culture image big data nonlinear scale space first needs to construct an anisotropic detection of the filial son culture image, and then put the filial son culture image into the diffusion. The directionality of the image structure is an important way to find image features. A two-dimensional wavelet transform can only describe the directionality of an image. The direction wavelet maintains good time-frequency positioning analysis capability and also has good direction analysis capability. Directional wavelets also reflect changes in image data in either direction at various resolutions. The anisotropic nonlinear scale space of the big data of the filial culture image can be obtained by constructing the Xiaobo table culture image with adjustable direction and using it to transform the nonlinear scale space. The method of forming a spatial fusion structure of a combined dutiful image is to perform a bottom-up differential decomposition of the image. Each layer of the image is formed by template filtering the upper layer by different ratios. The basic image manipulation can be that the spatial hierarchy is implemented in a targeted manner. And multiple sets of low pass or band pass images can be generated to provide uniformity between local fusion and global fusion through hierarchical interconnections.

Taking any closed surface ξ in the medium D, the space enclosed area is Ω, u(x, y, z, t) is at time t, k(x, y, z) is the heat transfer coefficient, and ρ is the medium density. i is the number of media particles, and vi(x, y, z, t) is the specific heat coefficient of the i-th point at time t. From time t_1 to t_2, the total heat transfer of all particles in the inner region of the surface ξ is:

$$Q = \iiint_{\Omega} \left[u\left(F_i^*(x, y, z, t_1), t_1\right) - u\left(F_i^*(x, y, z, t_2)\right) \right] v_i(x, y, z) \rho didxdydz \tag{1}$$

There are several ways to create multi-scale spaces. A wavelet is a function that satisfies certain conditions ψ(x), which is a set of functions formed by expansion and translation:

$$\psi_{a,b}(x) = |a|^{1/2} \psi[(x-b)/a] \tag{2}$$

The basic idea of wavelet transform or wavelet decomposition is to represent any square integrable function or energy finite signal as a superposition of wavelet coefficients. Understand the multi-scale expression and construction methods of data, we can derive multi-scale spatial association rules based on these methods, that is, derive spatial association rules of other scales from spatial association rules of scales.

Among them, the general module contains the general calculation method used in other modules. There is no function menu for the general module in the system interface, which is in the form of global functions in the system. The pre-processing module is a condition for pre-processing the image to enhance and classify the image before it is enhanced, classified, and the like. It mainly implements image segmentation, image stitching and image projection reconstruction. The enhancement module is the most important module in the image processing system algorithm. In general, the contrast between unprocessed remote sensing image pixels is difficult to distinguish the details of the features represented by the image. The image enhancement method can enhance the contrast of the image to distinguish the details of the feature, and can highlight a specific region of interest for image analysis purposes. Spatial domain enhancement can be subdivided into radiation enhancement, spatial enhancement, and spectral enhancement. Its organizational chart is shown in Figure 1.

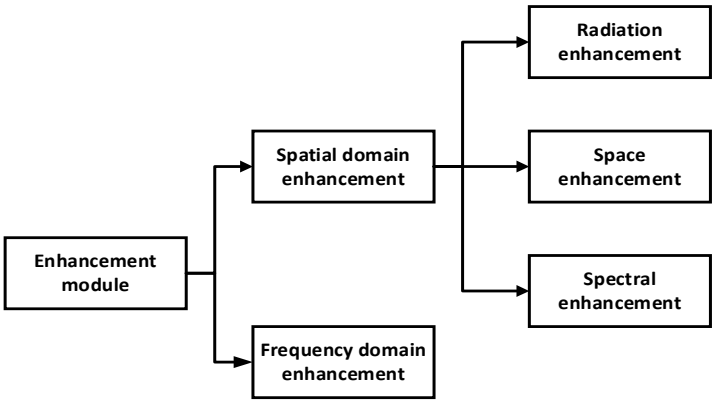

Figure 1. Organization chart of the enhancement module

4. Big Data Filial Culture Image Processing Scale Space Instance Algorithm Experiment

The experiment evaluates the algorithm from two aspects: space complexity and time complexity. The first indicator is the relationship between the increase in the number of feature points and the execution time. The feature point set is divided into five groups of 200 objects each. Gradually insert 200 objects and record the running time. The result is shown in Figure 1. The second indicator is the relationship between the increase and execution of feature point attributes. The attributes of the feature points are divided into 5 groups, each group has 2 attributes, and the running time is recorded. The result is shown in FIG. 2. It can be seen that the algorithm increases with the increase of the feature points, and the time increases faster than the increase time of the feature point attribute items. Therefore, the choice of the number of feature points is the key to the algorithm. The big data volume filial algorithm was tested by an algorithm. The test environment and test data are shown in Table 1.

Table 1. Algorithm test results table

Algorithm	Float type Img file	Float type Bsq file
Point operation	6'50"	5'35"
Template operation	18'50”	14'06"

The most basic purpose of digital communication design for filial culture images is to accurately convey information. The basic task of design practitioners is to clarify the core content of information dissemination. The multimedia collaborative work environment is an integrated system that combines the interactivity of computers, the distribution of networks, and the comprehensiveness of multimedia. Design projects in a comprehensive, multi-angle manner through images, sounds and animations. Therefore, designers must have clear and firm goals. Reasonable use of technical means and reasonable resolution of contradictions in design can accurately display the information of filial cultural image. The Gaussian kernel function is used as a filial piety culture image in the nonlinear scale space of the big text of Xiaowen image, and feature enhancement occurs between images of different scales. After searching for different angles and regions, a stable image feature is finally screened out. The detection process and results will conform to the evolution and detection characteristics of the large-scale scale space of the filial culture image. After many tests and comparisons, the algorithm module achieves the design effect, can realize the processing of massive data, and has high efficiency in the image filtering algorithm. The experimental results of feature enhancement and feature fusion anisotropy detection are shown in Figure 2.

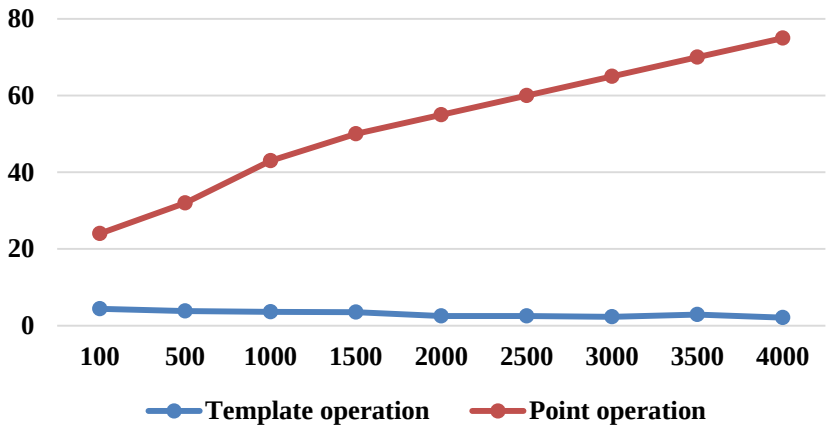

Figure 2. Results of a heterosexual test experiment

The difference in efficiency is the result of the filial image structure. The reason for this result is that when the input image reaches a certain ratio, the performance of the machine processing will reach the bottleneck. And subsequent inputs are delayed, causing the input time to grow exponentially. Conversely, filial images address this limitation by storing a large number of small files in a large file, then splitting them and then processing them in parallel. This is equivalent to processing only a few files without worrying about the size of the input image. At this level, the increase in image size has little effect on the use of filial culture images as input.

5. Conclusion

As the core idea of the ancient moral level, filial piety plays a vital role in the moral constraints of the entire Chinese nation. There is no doubt that the way of filial piety communication is very successful. This paper starts with the multi-scale features of spatial data and analyzes the conceptual hierarchy between multi-scale spatial data. The key issues of the multi-scale spatial concept hierarchy are discussed using point autocorrelation. Based on the nearest neighbor association method, the multi-scale point object spatial association rule mining algorithm shows that the algorithm is effective. The non-linear scale space of filial image big data is complementary to

multi-scale analysis theory and big data related theory. This space has significant advantages in terms of openness and scalability compared to traditional scale spaces. The examples of the image space of the dutiful sons listed in this paper have also achieved good application effects in the field.

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