Material Collection and Computer Software Oil Painting Creation Analysis Based on Big Data

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Abstract
In this era of rapid technological development, the explosion of data has caught people off guard. With the expansion of computer application fields, big data technology is applied to all aspects of life, including image processing technology. The amount of information contained in images is also rapidly increasing. Therefore, how to effectively use the image processing technology supported by big data technology has become the focus of this paper's thinking on processing technology. Based on the background of big data, this paper analyzes the relationship between material collection and computer software oil painting creation, and designs a massive data storage model based on cloud computing. The study showed that half of the 24 people surveyed believed art was impossible. 47% believe that art can also be a work, a work can also be art, and can be exchanged. 3% believe that art has become a tool for making money. The establishment of a large database allows oil painting creators to have more creative ideas, but at the same time their art museums also show obvious contradictory characteristics. But almost everyone agrees that art is sacred, pure, an expression of the author's heart.

Keywords: *Big Data, Computer Software, Oil Painting Creation, Material Collection*

1. INTRODUCTION

As we all know, the field of art has always focused on aesthetic ideology, and the adjustment of human thinking ability is often influenced by many new digital technologies and digital products, and plays an extremely critical role. In the era of big data, with the popularization of digital technology in the process of artistic creation, the aesthetic ideology of art has been affected by digital technology as never before, and has undergone profound changes. At the same time, the aesthetic ideology of art has also suffered serious changes.

Wang Gang believes that this group of Chinese painters is a combination of various forms and structures. The aesthetic consciousness and creative orientation of the group have contributed to the different patterns of modern oil painting styles. Starting from the artist's group consciousness and creative concept, studying the composition of different painting styles today will play a positive role in promoting the development and development of modern Chinese oil painting styles [6]. Huang believes that after the introduction of oil painting into China, as one of the artistic themes of painting, it not only integrates oriental characteristics, but also reflects the unique aesthetic taste of the Chinese nation. An art system including philosophical concepts, cultural grammar, aesthetic methods and aesthetic values has been formed. In the context of big data, we need to start exploring the diversified development of oil painting, hoping to integrate oil painting into China spiritually [2]. Won Sang feels that in the process of painting creation, "emotion" is the soul of art. A work of art without emotion has no life. Only with rich real emotions and unique painting form factors can it be called a good work of art. Big data enables creators to better find the material they need and experience deeper emotions [3].

Through rational analysis and in-depth research on oil painting materials, this paper studies that with the support of big data, the images in oil painting creation can be better reconstructed and organized to fully demonstrate the appeal of oil painting works. By studying the influence of image materials on oil painting creation and application measures, the majority of painters can have a deeper understanding of the specific value of image materials, understand the advantages and disadvantages of image materials in oil painting creation, and provide a new way for oil painting creation.

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2. METHOD

2.1. The Development of Chinese Oil Painting

The dominant type of painting in Western painting is oil painting. Quick-drying vegetable oil is used to blend the paints used in painting, and then created on linen canvas or canvas, and some painters will create on wooden boards. This kind of painting is called oil painting. Because the paint of the oil painting will have a certain degree of hardness after it dries, the glossy color will be easily preserved after the picture dries. With the color pigments that have the characteristics of transparency and hiding power, the rich color changes of the painted objects, the three-dimensional effect and texture can be fully expressed. Oil painting has probably undergone three different periods of development. It can be simply divided into classical oil painting, modern oil painting and modern oil painting. The oil paintings of each period have their own features, because they are all produced in different periods, have different artistic ideas, and are restricted by different oil painting techniques. According to early documents such as Zhou Li and Han Shu, the earliest use of "oil" for painting appeared in coffins in China more than two thousand years ago [5].

Through the emotional injection of different works, the painter conveys different emotional experiences to the viewers, presenting an infinite sense of beauty. Whether it is Western painting or Chinese painting, if there is no emotional integration, the soul will be lost, and there will be no lifeless artistic beauty. In the use of color, the ancient six methods emphasize the use of color in different categories, while Chinese painting emphasizes the subjective expression of color. Although the tone of the brush and ink is different from that of Western oil painting, it is not exactly the same as the abstract "void". Its shape starts from the tone of realism, similar to Western symbolism, impressionism and expropriation. Chinese painting pays more attention to artistic conception and artistic conception. In the face of rural oil painting, color is no longer a pastime. Only by constantly exploring colors, carrying more brush concepts, and controlling the picture well, can we carry mood and love [1].

Art is the natural expression of human nature, and creation is inspired by it. Taking into account the artist's preference for a certain beauty in life and the differences in subject matter and subject matter factors, the painter will have a special preference for life performance, and form different artistic expressions according to different emotions and artistic achievements.

2.2. The Help of Big Data for Oil Painting Creation

With the development of modern science and technology, the emergence of big data has promoted various digital processing software tools. High-tech images provide conditions and opportunities for oil painting creation to obtain a large number of material images, which have become an important source of material in the process of oil painting creation. Especially with the continuous maturity of dynamic digital image technology, digital image processing software and materials of different types and functions have been rapidly deployed in front of art creators for their choice and use. At the same time, a large number of video materials have been produced so that oil painting creators can fully choose materials. Among them, the dynamic image is to accurately record the shape of the scene, so that the oil painting creator can feel the state of the design during the creation process, making the oil painting creation more realistic, and the diversity of the oil painting content is also guaranteed. It is precisely because of the richness of painting materials that in addition to paying attention to the content of the drawing board, the author of a painting must also design creative materials to ensure the content of the oil painting from a variety of digital images and dynamic image materials [7].

The texture of the painting materials and the characteristics of the projection stand are innovative in the creation of oil paintings. The artistic type of Impressionist painting achieved brilliant artistic success in Western Europe in the 19th century, during which extreme imagery was used to create Olive art. Impressionists interpret unique composition angles from photographic images and innovate classic panoramic composition methods. Impressionist painters can output fragmented images from photography for artistic appreciation, which is a new change to traditional methods. The famous French Impressionist painter Edgar Degas created many contemporary subjects and portraits. It deals with creation issues from a human perspective, which is significantly different from classic creation [4].

2.3. Digital Image Technology Makes Some Oil Painting Creators Lose the Sense of Painting

The independent aesthetic value of oil painting stems from the fact that the language of the oil painting author reflects the creator's emotions and thoughts. Oil painting language expresses individual points, changing colors, different lines and dynamic content of oil painting through texture. It is the essence of painting that the author of oil painting expresses his thoughts and feelings in the language of oil painting. However, when they saw images produced and processed using digital imaging techniques, they were unable to describe the scene, nor could they feel the texture and beauty of the scene. Therefore, the natural emotion of oil painting will be limited and lost to a certain extent.

The development of technology has made digital image processing technology widely used in oil painting creation, making oil painting creation closer to process design. As far as the development of oil painting creation is concerned, the disappearance of the artist's awareness of painting will make the artist face greater difficulties in the process of creation, and may even become an artist in a very difficult situation. The reason is that the common feature of oil painting in shape and color is the aesthetic value of independence and originality, which also shows that it is different from creating images with digital technology.

The development of digital imaging technology has also had a certain negative impact on the process of oil painting creation. The loss of the sense of painting is precisely the most intuitive negative impact of digital imaging technology on oil painting creators. With the help of digital imaging technology, although the creative space of oil painting has been expanded and improved, oil painting creators have a clear sense of imitation in the process of creation.

2.4. Data Access Patterns of Storage Systems

In order to better understand and design different caching strategies, the following lists the common data access patterns summarized from the application. Different data access patterns have different access characteristics.

2.4.1. Recency-friendly data access mode

The basic form is:

$$\left(a_1, a_2, \ldots, a_{k-1}, a_k, a_k, a_{k-1}, \ldots a_2, a_1\right)^N \tag{1}$$

Among them, k represents the number of data blocks, and N represents the number of loop visits. This data access mode has good data locality, that is, the currently accessed data has a high probability of being accessed again in the near future. This access pattern is common in big data applications.

2.4.2. Frequency-friendly data access mode

The basic form is:

$$\left(\left(a_1, a_2, \ldots a_{k-1}, a_k\right)^A P_\varepsilon\left(b_1, b_2, \ldots, b_m\right)\right)^N \tag{2}$$

Among them, k represents the number of data blocks accessed more than once, A represents the number of times the k data blocks are cyclically accessed; m represents the number of data blocks accessed only once in one round of access, and Pε represents the m data blocks accessed Probability of a block: N represents the number of times the entire access process loops. When k<cache size, the data blocks accessed more than once can be completely stored in the cache, and when k+m>cache size, the cache cannot store all the data blocks, and some data blocks are replaced by the current cache. A good replacement strategy in this scenario should preferentially replace the data blocks b1, b2, ..., bm that are only accessed once.

In the seed access mode, the data blocks in the system are accessed with a non-uniform frequency. Caching more frequently accessed data blocks will lead to greater access performance improvements.

2.4.3. Loop data access mode

The basic form is;

$$\left(a_1, a_2, \ldots, a_{k-1}, a_k\right)^N \tag{3}$$

Among them, k represents the number of data blocks accessed by the loop, and N represents the number of loops.

The data access pattern means that the data block is continuously accessed in a circular fashion. Seed access mode is common in big data iterative computing applications, such as K-Means and PageRank. In this data access mode, replacing the most recently accessed data block will achieve better results, while replacing the data block that has not been accessed for the longest time will cause each accessed data block to be out of memory.

2.4.4. Mixed data access mode

The basic form is;

$$\left(a_1, a_2, \ldots, a_k, a_k, \ldots, a_2, a_1\right)^{N1}\left(\left(a_1, a_2, \ldots, a_{k-1}, a_k\right)^A P_\varepsilon\left(b_1, b_2, \ldots, b_m\right)^{N2}\right)^N \tag{4}$$

Among them, k represents the number of data blocks accessed cyclically, A represents the number of times the k data blocks are accessed cyclically; m represents the number of data blocks accessed only once in one round of access, and Pε represents the m data blocks accessed The probability of ; N1 represents the number of cycles of accessing data blocks in Recency-friendly mode, N2 represents the number of cycles of accessing data blocks in Frequency-friendly mode, and N represents the number of cycles of the entire access process. The data access pattern is usually a mixture of multiple access patterns.

Corresponding to the above-mentioned different data access modes, a corresponding cache scheduling strategy can be adopted in practical applications to achieve the most efficient read and write access performance as much as possible.

3. EXPERIMENT

3.1. Mass Data Storage Model

In the face of large-scale data analysis requirements, due to factors such as data access speed becoming faster and faster, the traditional structured data storage methods have been unable to adapt. The three most common ways to solve data storage are direct-attached storage (DAS), attached storage (NAS), and storage network (SAN), but in the face of more and more complex data, these three Each method has its own obvious shortcomings. Low scalability and low performance are the main drawbacks of direct-attached storage. Although linked storage is lower in cost and more convenient to use, its storage performance is low. The construction cost of storage network is high, although it can improve the efficiency of data transmission, but because of its closed architecture, it is difficult to integrate with other systems. Therefore, we propose a massive data storage model based on cloud computing here. We apply the open source distributed parallel framework Hadoop that implements the MapReduce computing mode, so as to realize the storage of massive data.

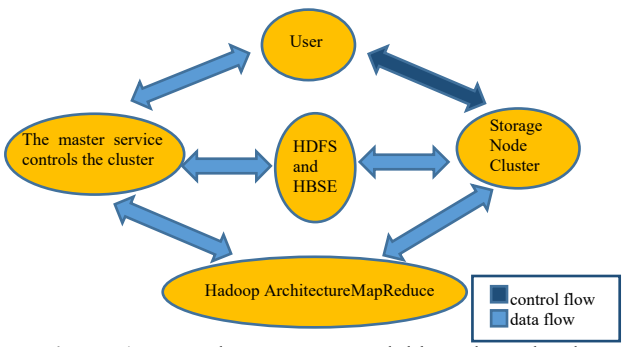

Figure 1. Mass data storage model based on cloud computing

The acceptance and response of the user's application request is carried out in the main service control cluster, which mainly plays the role of control here. The generated data is stored in a data storage node cluster composed of a mass data storage capacity cluster system or disk array through data streams. The main service control cluster and the storage node cluster are implemented through HDFS and Hbase, which can deploy the database on each node. Through the Hadoop architecture, users can directly read and operate data through storage nodes after transferring information to the main service control cluster, thus avoiding system congestion caused by a large number of data read operations.

The data is cut and calculated by the Map function in MapReduce, and then divided into several data blocks. The data blocks are allocated to each storage node through HDFS and Hbase, and then the storage node address and data block information are returned to the main service control cluster. Users obtain this information through the master service control cluster. Through this process, the user thus completes the data storage operation. When a node fails, the data blocks being processed will be redistributed immediately.

When the user extracts data, the main service control cluster receives the user's extracted data information, HDFS and Hbase find the relevant data block information and transmit it to the main service control cluster. After receiving the feedback information, the main service control cluster It is passed back to the user. After receiving the information, the user creates a download thread for each node according to the information, downloads the file blocks to the local computer, and then uses the Reduce function of MapReduce to integrate them into a complete information file and then remove the file blocks. When Hadoop finds that a node fails, it immediately transfers the file being taken out to another idle node for re-downloading, so as to ensure the successful completion of the download.

By using distributed file system, distributed database, Hadoop framework and the core MapReduce technology of cloud computing, parallel computing and distributed storage of data are realized, so that the storage module can be better applied to the storage of massive data.

4. DISCUSSION

4.1. The Loneliness Of Artistic Exploration

Table 1. Artistic values of oil painting creators have obvious contradictory characteristics

Number of people	Proportion in the total number of people	Characteristics of artistic values	
		On the one hand	On the other hand
10	50%	Creators can not compromise to life, want to adhere to pure artistic creation, very painful	Almost everyone agrees that art is sacred, pure and the expression of the author's heart.
9	47%	The author thinks that art can also be work and work can also be art, which can be exchanged	
5	3%	Artists believe that art has become a tool to make money.	

It can be seen from Table 1 that with the development of science and technology, the establishment of large databases has given oil painting creators more creative ideas, but at the same time, their art museums also showed significant contradictory characteristics. Among the 24 people surveyed Among them, half of the people think that art cannot compromise with life and want to insist on pure artistic creation. But at the same time, he also endured the torment of the antagonistic relationship between "art" and "market". 47% believe that art can also be work, work can also be art, and can be exchanged. 3% believe that art has become a tool for making money. But almost everyone agrees that art is sacred, pure, and the expression of the author's heart.

4.2. Artistic Creation Attitude

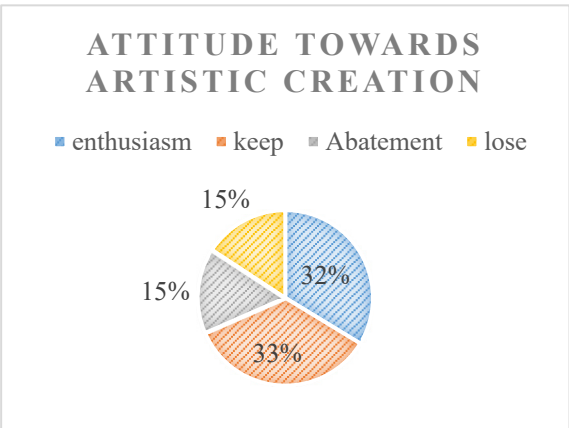

Figure 2. Survey of artistic attitudes

It can be seen from Figure 1 that some people can still maintain the high artistic creation momentum and will continue, accounting for 32%; some people can maintain the current attitude of persisting in creation, accounting for 33%; some people have a downturn in artistic creation, and may have appeared Long-term interruption, accounting for 15%; some people have almost disappeared, and there are almost no works after graduation. They think that they are no longer necessary for creative activities, accounting for 15%. The fundamental reason that caused them to interrupt artistic creation, and in recent years, with the emergence of more and more "imitation" incidents with the support of large databases, they have lost their original creative passion, and a very small number of creators have experienced the baptism of society I also maintain a high degree of enthusiasm for creation. After all, in this fast-paced life, it is difficult to calm down and paint a good oil painting.

4.3. The Realization of We Bgl Drawing

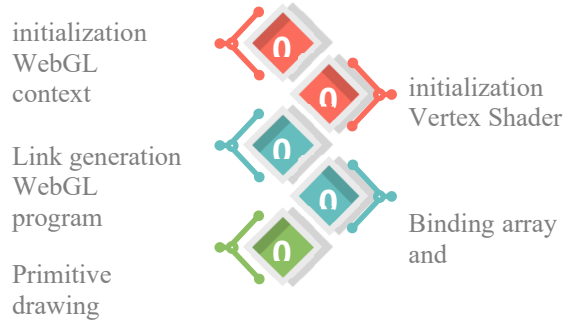

Figure 3. We bgl drawing process

Using We bGL can provide a better idea for the creation of oil paintings. There are two kinds of variables in WebGL, vertex attribute variables and constants. Among them, vertex attribute variables transfer data related to vertices, including position, color, texture information, etc.; while constants deal with data that are the same as vertex data, such as ambient light, projection matrix, and transformation matrix.

5. CONCLUSION

Big data technology plays a vital role in oil painting creation. In the process of continuous development of big data technology, oil painting art is also carrying on inheritance and innovation, and the powerful database background based on big data can provide a good background for oil painting creation. support. Image digital technology has both positive and negative aspects for oil painting creation. Creators need to inherit the experience summed up before, sort out their own understanding of the real world, and constantly try new art rules and art directions. We are currently in the era of digital technology. Facing the great changes of the times, the process of oil painting creation is also undergoing tremendous changes. In the process of continuous integration of traditional art and modern technology, digital images are not only the driving force and element of oil painting creation, but also The fusion of technology, tradition and modernity. The value of art lies mainly in creation. On the basis of making full use of the advantages of digital images brought by its big data technology, it can effectively avoid its negative effects, make image materials better used in oil painting creation, promote oil painting creation, and constantly accept new forms of artistic expression. Revolutionize the visual space of the public.

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