Retraction

Retraction: Oil Painting Material Collection System Based on Artificial Intelligence (J. Phys.: Conf. Ser. 1852 022029)

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The authors of the article have been given opportunity to present evidence that they were the original and genuine creators of the work, however at the time of publication of this notice, IOP Publishing has not received any response. IOP Publishing has analysed the article and agrees there are enough indicators to cause serious doubts over the legitimacy of the work and agree this article should be retracted. The authors are encouraged to contact IOP Publishing Limited if they have any comments on this retraction.

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Oil Painting Material Collection System Based on Artificial Intelligence

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Abstract. In recent years, with the rapid development of computer technology and artificial intelligence technology, the traditional oil painting creation field has also had a lot of influence. The most typical way to collect and manage materials in the future is to collect and manage materials through the Internet. Therefore, this paper puts forward the research of oil painting material collection system based on artificial intelligence. In this paper, the artificial intelligence technology and oil painting material collection work are deeply studied. The analysis shows that the traditional oil painting material collection work has obvious problems such as low efficiency, high cost and low accuracy. And through artificial intelligence technology, we can better solve these problems. According to the characteristics of oil painting material collection, combined with the latest artificial intelligence information collection technology, this paper establishes an intelligent system suitable for oil painting material collection. In order to further verify the actual effect of the collection system in this paper, the corresponding comparative experiments are established. The experimental data show that the highest accuracy rate of the artificial intelligence material collection system in this paper is as high as 99.6%, which is significantly improved compared with the 87.6% accuracy rate of the traditional artificial material collection method. Moreover, while ensuring the accuracy rate, the number of collected materials has been greatly improved. Analysis shows that this system effectively improves the efficiency of oil painting material collection.

Keywords: Artificial Intelligence, Oil Painting creation, Material Collection, Material Management

1. Introduction

The creation background of painting has certain characteristics of the times. The rapid development of contemporary information technology has brought a variety of influences to the art of painting. For example, some artists' material collection methods prove that many artists use computers, mobile phones and photography to collect materials. These materials usually come from commercial culture.
and popular culture \cite{1-3}. Record your life with a camera, and input these photos into the computer for processing and analysis. Use some fashion symbols in business culture and transform them into materials they need through modern technology \cite{4-5}.

The development of information technology makes the network become the main way to obtain materials, but the expansion of network information seriously affects the efficiency of material collection. Browser can solve the problem of getting information to some extent, but because of the large amount of information, users need to search information manually, which needs more time. At the same time, the accuracy of the search results is low, and there are many irrelevant information, which can not meet the needs of oil painting users \cite{6-7}. In this context, artificial intelligence material acquisition system came into being. It mainly uses various search engines to mine data, search web pages, and then process the collected data, that is to filter out irrelevant information. Then, under the automatic sorting function, duplicate data is eliminated, and effective classification processing is carried out according to the data subject or category, and the retrieval technology is used to meet the needs of users \cite{8-10}.

This paper deeply studies the application of artificial intelligence technology in the field of oil painting material collection in China, and understands that the application of artificial intelligence technology in oil painting material collection is not much, and it is still in the initial stage of research. However, through artificial intelligence technology, the traditional oil painting material collection method has been greatly affected, through intelligent technology and network technology material collection is the future development trend. Therefore, this paper establishes the oil painting material collection system based on artificial intelligence, hoping to establish an intelligent system suitable for oil painting material collection through the optimization and improvement of the artificial intelligence information collection system in this paper, so as to improve the efficiency of oil painting material collection in China. In view of the low efficiency and high cost of the existing material collection methods, this paper establishes an oil painting material collection system based on artificial intelligence technology. In the related comparative experiments, the experimental data show that the collection system based on artificial intelligence has obvious advantages over the traditional manual collection method. The analysis shows that the research in this paper has achieved ideal results and made a contribution to the research of artificial intelligence technology in the field of oil painting material collection.

2. Oil Painting Material Collection and Artificial Intelligence Material Collection System

2.1 Contemporary Material Collection and Analysis Methods

Oil painting art has distinct characteristics of the times, and its creation methods and material collection are related to the background of the times. With the development of information technology, more and more oil painters use computer, photography and other image processing technology to collect and process creative materials. Use camera or photographic equipment to record life scene and input it into computer for image processing. In this way, artists actively enter the life, into the society, into the public. The application of new technology not only provides convenience for the collection of materials, but also broadens the imagination space of artists. Computer virtualization can save a lot of repetitive work and shorten the process of material collection. Intelligent technology has a certain inspiration and catalytic effect on oil painting creation. The collection and analysis of oil painting creation materials no longer rely solely on brush and canvas, but have an obvious trend of science and technology.

2.2 Artificial Intelligence Material Collection System

This paper will explore the function of network resource search engine, and through keyword search, realize intelligent material collection, collect and extract the required materials. The artificial intelligence material collection system mainly uses the keywords of Internet search engine to search
the relevant resources in the Internet, and finally displays the search web page based on standardization, which realizes the extraction and processing of the main material text in the retrieval resources and the intelligent identification of the collected materials. Compared with the traditional network material collection system, the artificial intelligence material collection system does not need to set collection rules in the process of data collection and retrieval, and the collection operation is relatively simple. At the same time, it does not need to identify and extract the resources and materials that have been collected and searched. In addition, the intelligent material acquisition system has strong portability and outstanding advantages in material collection and application.

2.3 Design of Material Acquisition System

The material collection system includes four functions: configuration management, material collection, exception management and page analysis.

(1) Configuration management

In the whole process of material collection, there are many contents that need to be customized by the collector to describe how to collect and parse pages. Therefore, the configuration management function is designed. The user can complete the operation configuration under this function.

(2) Material collection

Material collection function is the core function of the system, and also the basis of oil painting material management. Because a large number of oil painting materials are published on the Internet every day, these contents can be used to create original oil paintings, so the material collection function is designed according to the demand system. Users need to set requirements according to their needs, such as according to the characteristics of materials, so as to distinguish materials and conduct intelligent collection.

(3) Exception management

The function of exception management includes anomaly detection, exception recording and exception recovery. When the system is abnormal, it will automatically start the repair and alarm functions.

(4) Page parsing

The material collection function only stores the original Internet resources locally. In order to extract the content of oil painting materials from these original resources, the system designs the page parsing function according to the demand. The operations completed under this function include parsing execution, result storage, configuration analysis, etc.

2.4 Construction of Classifier

The basic idea of the algorithm is that after the new text is given, the K text closest to the new text is trained, and the new text is determined according to the K text categories.

(1) Based on feature set based text vector restatement.

(2) After the arrival of the new text, the new text is divided into one word according to the feature words.

\[ MI(W, C_r) = \log \left( \frac{P(W|C_r)}{P(W)} \right) \]  \hspace{1cm} (1)

(3) In the training text set, select k texts that are most similar to the new text
There is no good way to determine the value of K. Generally, an initial value is set first, and then the value of K is adjusted according to the experimental results. Usually, the initial value is set between hundreds and thousands.

(4) In the K neighborhoods of the new text, the weight of each type is calculated in turn, and the calculation formula is as follows;

$$\text{Sim}(d, d_j) = \frac{\sum_{i=1}^{M} W_{d_i} \times W_{d_j}}{\sqrt{\left(\sum_{i=1}^{M} W_{d_i}^2\right) \left(\sum_{j=1}^{M} W_{d_j}^2\right)}}$$ (2)

(3) Compare the weight and divide the text into the category with the largest weight.

When the output of the network is judged correctly, the weight vector remains unchanged. On the contrary, the weight vector is adjusted, increased or decreased.

3. Experimental Methods

In order to further verify the actual effect of the artificial intelligence oil painting material collection system, this paper establishes a comparative experiment. This experiment is divided into two groups, the first group is the traditional artificial material collection group, the second group is the artificial intelligence material collection group. According to the characteristics of oil painting materials, a total of 10 material keywords are set. According to the keywords, the traditional group can choose to shoot and search on the Internet; the artificial intelligence group can collect by the intelligent material collection system. Considering that the traditional material collection method is more time-consuming than the artificial intelligence material collection method, the experimental time of the traditional method collection group is set as one week, and the artificial intelligence collection group time is set as one day.

In this experiment, the number of materials, accuracy, and satisfaction were set up to evaluate the effect of traditional material collection method and artificial intelligence material collection method.

4. Discussion

4.1 Experimental Results and Analysis

After a week of experimental investigation, the experimental data were statistically analyzed, and the results in Table 1, Figure 1 and Figure 2 were obtained. According to the experimental results in Figure 1, in terms of the amount of material acquisition, the material acquisition system using artificial intelligence is significantly higher than that of the traditional material acquisition method. The artificial intelligence collection system collects 2175 keywords in 10 keywords, while the traditional manual collection method only has 429. In terms of quantity, the artificial intelligence material collection system has obvious advantages. Whether the oil painting materials can be used or not needs further consideration of the efficiency of the materials. According to the experimental results in Figure 2, the highest accuracy rate of the artificial intelligence material collection system reaches 99.6% and the lowest accuracy rate is 97.5%; while the traditional artificial material collection method, the highest accuracy rate is 87.6%, and the lowest accuracy rate is 53.4%. From the analysis of accuracy, it can be seen that the accuracy rate of artificial intelligence material collection system is better than that of traditional manual collection method, but the accuracy rate of artificial intelligence material collection is mainly determined by the set rules. Therefore, in order to further improve the accuracy rate of artificial intelligence material collection, it is necessary to set keywords more clearly. Combined with the data in Table 1, it can be seen that the artificial intelligence material collection system is not only superior to the traditional manual mode in terms of quantity and accuracy, but also
superior to the traditional method in terms of user experience satisfaction.

**Table 1.** Statistical table of experimental results

| key word | Collection number | Acquisition accuracy rate (%) | Satisfaction rate (%) |
|----------|-------------------|-------------------------------|-----------------------|
|          | Artificial intelligence | Traditional artificial       |                       |
| 1        | 175               | 36                            | 98.2                  |
| 2        | 219               | 45                            | 98.6                  |
| 3        | 223               | 49                            | 90.3                  |
| 4        | 265               | 24                            | 98.7                  |
| 5        | 156               | 29                            | 99.6                  |
| 6        | 148               | 33                            | 99.3                  |
| 7        | 229               | 49                            | 97.9                  |
| 8        | 274               | 52                            | 97.5                  |
| 9        | 186               | 39                            | 98.7                  |
| 10       | 300               | 73                            | 99.4                  |
|          | Artificial intelligence | Traditional artificial       |                       |
| 1        | 36                | 98.2                          |
| 2        | 45                | 98.6                          |
| 3        | 49                | 90.3                          |
| 4        | 24                | 98.7                          |
| 5        | 29                | 99.6                          |
| 6        | 33                | 99.3                          |
| 7        | 49                | 97.9                          |
| 8        | 52                | 97.5                          |
| 9        | 39                | 98.7                          |
| 10       | 73                | 99.4                          |

**Figure 1.** Comparative analysis of the quantity of materials collected by different collection methods
4.2 Way of Material Accumulation

(1) Looking for material in life
Rich life experience is the basic premise of artistic creation, and the spark of painting creation is produced under the profound life perception. The reason why the works of art masters can shake people's hearts is because of his deep understanding of life. Seek inspiration from the simplest and simplest things, and turn the little bits of life into moving pictures.

(2) Looking for material indirectly
What you see with your own eyes is valuable, and so is indirect material. With the rapid development of the Internet, painters can browse books and pictures on the Internet and collect information. With the help of these materials, you can add your own creative inspiration and pass it on to the audience.

(3) Download material via Internet
Online downloading is also one of the most important ways to collect materials. In this digital image age, everyone will share resources. All kinds of pictures are displayed in front of people. The reproduction of materials is just like a kind of Western fast food with low price. Therefore, the creation of oil painting can also accumulate materials by downloading from the Internet.

4.3 Application of Material in Oil Painting Practice
Oil painting is in two-dimensional space, through color, line and shape to simulate the image of objective things. In the process of creation, the object described is combined with the image in memory, and a large number of attempts are made in composition, and the material is adapted according to memory and imagination. After the advent of cameras, traditional easel painting has been impacted by giants. After all, photography can record the objective reality better than painting. But there are qualitative differences between them in the meaning of "truth". Many painters use
photographic materials for painting, they also affirm the role of photos, but artists still emphasize the use of eyes to observe and experience natural life. Therefore, the material collection has great application value in oil painting practice, so we need to pay attention to the role of material collection. In the daily oil painting creation, we should not only constantly improve our oil painting skills, but also strengthen the collection methods of materials. Only by selecting appropriate materials and combining with their own better oil painting skills can we achieve the desired final effect.

5. Conclusions
Most of the traditional oil painting materials are collected from life, and they are collected by shooting. But in recent years, the rapid development of artificial intelligence technology has an important impact on the traditional oil painting material collection method. More and more facts have proved that artificial intelligence technology can improve the efficiency of optimizing material collection. The research of oil painting material collection system based on artificial intelligence proposed in this paper proves the great advantages of artificial intelligence technology in oil painting material collection through examples. Compared with the traditional oil painting material collection work, the use of artificial intelligence information collection technology can better make up for the problems of low efficiency, high cost and low accuracy in the current traditional oil painting material collection, and make contributions to the development of China's oil painting industry.

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