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Retraction

Retracted: Design Method of Art Innovation Space Based on Computer Image Data Acquisition

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] L. Wu and B. Xu, "Design Method of Art Innovation Space Based on Computer Image Data Acquisition," *Journal of Sensors*, vol. 2022, Article ID 4634772, 10 pages, 2022.

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Research Article

Design Method of Art Innovation Space Based on Computer Image Data Acquisition

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With the development of science and technology, it brings more possibilities for artistic space design method innovation. The development of computer image data acquisition technology has realized the continuous extension of artistic space design and creation. Based on the computer image data collection technology, this paper realizes the innovative design of real and virtual environment in the exhibition of art space, centering on the interactive integration of the three elements of "human-objects-space." Through the experimental design, from the space, color data collection, display space moving line, and space function design scheme were the four aspects of exploration and analysis. Compared with traditional design methods, the following conclusions are drawn: first, in spatial data acquisition, the average error of area measurement is less than 3.63%, and the measurement accuracy can reach more than 91%. Second, the average accuracy of color detection of various materials in space can be maintained at 90%. Third, the spatial movement line designed in this paper is simple and clear, with appropriate length, so that visitors can achieve the best visiting effect with the smallest distance. Fourth, the overall design scheme is reasonable, the space is transparent and bright, and the tour route is clear. It can complete the functional zoning design of the art exhibition space in a short time, saving a lot of manpower and time.

1. Introduction

Space is everywhere; in the history of human art development, space design plays a very important role. In reality, many art forms are involved in space design. Painting, graphic design, sculpture, and so on all show their own art space to varying degrees [1]. With the development of The Times, the concept of space is also constantly extended. For example, the space of painting works not only refers to the space represented by images in the picture but also involves the art space display of the whole exhibition [2]. Art space design is constantly integrating virtual space and physical space.

Art exhibition space design is a very important aspect of art space design, this paper on the art exhibition space design research. There are many ways to design art exhibition space. Traditional art exhibition space design displays art space through image description, realistic colors, realistic light and shadow, and other design methods [3]. With the continuous development of The Times, computer technology has caused a series of innovations in display methods, such as interactive media technology, intelligent technology, virtual technology, and network technology, and it affects all walks of life at the same time. The new cultural phenomenon has brought many changes to our production and life, and these changes have brought new challenges to the space design method.

With the arrival of the information age, art exhibition space design means innovation. People break through the limitation of time and space in art space design and expand the thinking space of human beings. All kinds of innovative display design methods are aimed at creating a comprehensive art display space [4]. Based on computer image data collection, this paper designed the space around the three

elements of "people, exhibition objects, and space" to create a new sensory and aesthetic experience different from the traditional art exhibition space.

Space is a form of existence of matter, and it refers to the extensiveness of the existence of matter. The word "space" is explained as follows in Ci Hai: the existence form of moving matter [5]. Space is nothing but the distance, direction, and size relations between objects. The ancient Greeks thought of space as the position, distance, range, and volume of objects. Space in the real world has no shape, and only spatial relations exist and no specific space as a whole [6]. As a representation of society, reflecting the society of artworks, the appropriate expression of space is particularly important. Thus, art space is formed [7].

Art space design is the result of the rise of artworks. Many scholars have studied the site experience of architectural space from the perspective of architecture. Taking self-experience as the starting point, Ghose analyzed the positive emotional experience space brings to people when they reach a certain cognitive level of space through the sensory system [8]. Ishii came up with the concept of "space spirit." In his opinion, architectural space lies in creating a place that can be experienced, and people's basic needs lie in experiencing their living situations [9]. His views laid a theoretical foundation for the definition of artistic space. In China, the research on art space design is later than that abroad. Renguan clarified the concept of "space design" [10]. Qi's Art Space Economy – A Report from the Frontiers of Change laid a theoretical foundation for the study of "space design" in terms of economy [11]. Until 2004, academic papers on "art space design" began to appear in China, mainly describing the concept, characteristics, and application of art space design [12]. Since then, relevant scholars have integrated the concept of art design with exhibition space. In 2005, the concept of art exhibition space design emerged [13]. In Exhibition Art Space, Ping lists many exhibition projects and introduces the design characteristics of exhibition space in detail [14].

Cones of image data acquisition systems began to appear around the 1950s. In the late 1950s, the United States took the lead in researching and using a military test system. Using this data acquisition test method can achieve high-speed automatic control and flexibility, which has been affirmed by many industry people; in the mid-1970s, instruments and meters were the same as computers. Begin to dissolve and give birth to a new type of image acquisition system. The new data acquisition system has excellent performance and quickly surpassed traditional products to become a new typical representative. By the mid-to-late 1980s, the large-scale development and use of integrated circuits such as industrial computers and single-chip microcomputers has greatly changed. The market structure and development direction, image data transmission, and processing capabilities have been greatly enhanced. Image data acquisition has developed rapidly since the 1990s. Image data collection technology has been used in many fields such as urban planning, architectural space, and exhibition space.

With the development of The Times, the concept of space is also constantly extended. The proposal of "Everything is architecture" began to change people's original cognition of space [15]. This view undermines the idea that space is an entity. The display space design in the computer age is significantly different from the industrial age. People break the limitation of time and space in information exchange and expand human thinking space. Visiting an exhibition is like experiencing a knowledge journey. "Experience" has become the key word, and the display space has become the carrier of information transmission. Various display methods are aimed at creating an interactive and wonderful experience space. Computer technology has realized the coprosperity and symbiosis of physical space and virtual space. The spatial design has gradually moved from material constraints to the practice of combining decriminalization. This paper applies the characteristics of multiperception, immersion, interaction, and conception of computer technology to the art solid space design, presenting the theme that is difficult to be interpreted by traditional display design vividly and stereoscopic to visitors.

2. Creative Exhibition of Art Space Design

This paper comprehensively expounds the design innovation display of art space through three aspects: art space display design elements, display design methods, and design innovation display.

2.1. Art Spaces Showcase Design Elements. Art space display design, as a comprehensive art design category with the main purpose of transmission and display, continues to fill its core with the progress of The Times [16]. Through the careful design of the exhibition space and visual communication, the display design from the art is the main body to the interaction and integration of the three elements of "human-space-exhibits." For people, artistic space is the construction of external situation jointly realized by objects, space, and culture. The behavior of people receiving information in the artistic space makes them form a connection, that is, a closed loop. Through external means to promote the good operation, the closed loop achieved perfect communication between people and art space. The innovative method of space design is external means. The art space shows the relationship between the three elements as shown in Figure 1.

"People": the process of transmitting information in artistic space design is that the space sends the code to the information recipient, and the audience participates in the decoding. The interaction between man and space is a form of communication, and the process of coding and decoding is completed together [17]. The exhibition space broadens the multiplatform narrative mode, tells the story behind the exhibits in an all-round way, stimulates the audience's curiosity and exploration of deeper unknown events through cognition, perception, and emotion, and emphasizes the dialogue between people and the exhibits.

"Exhibition" includes works of art related to the theme of the exhibition, auxiliary equipment for display, and furnishings. Information circulation goes through three stages of "thawing, circulating, and freezing again" [18]. In the

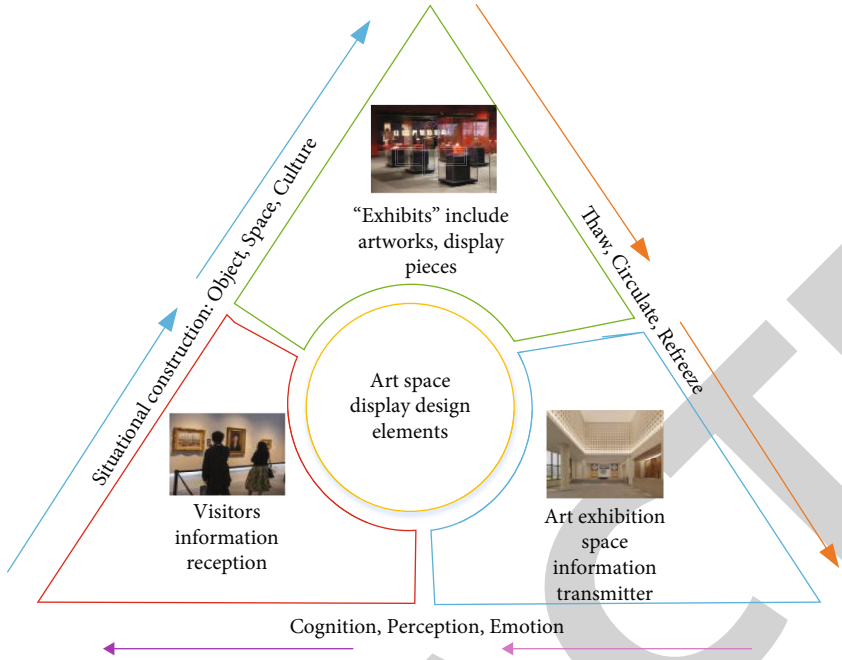

Figure 1: The art space displays the relationship diagram of three elements.

communication process of information transmission between the exhibition space and the audience, the first is to attract the curiosity of the audience through the setting of questions or visual attraction. Second, the exhibits are placed in a historical context to fully embody their informational value. Finally, the viewer internalizes the new information, synthesizes personal cognitive structure, and forms personal image information.

"Space": space is the closest space where people experience, learn, and acquire knowledge. The elements related to the design of exhibition space include the application design of space lighting, color, and space material. The interaction between viewer's psychology and space perception should be paid attention to in artistic space design. Therefore, the multisensory perception of the audience needs to be considered in the design of the space. For example, the cramped spatial layout and the zigzagging spatial streamline will make the audience feel nervous. The spatial scale that accords with the viewer's daily behavior experience brings people a sense of intimacy, and the changing form of space affects the psychological effect of the viewer.

2.2. Innovative Art Space Design Methods. There are various methods of artistic space design, which are constantly innovated with the development of The Times. The expression form of space art design is restricted by material and technical conditions in the process of innovation. The traditional art space design method presents single, static, and passive characteristics. Visitors can only visit and tour, with the direct instillation of information as the main means, in a state of passive reception, which greatly reduces the efficiency and quality of information dissemination. With the continuous development of computer technology, the carrier of art design is gradually transferred from the traditional two-dimensional plane medium to the environment space, and the form of graphic expression is also moving forward from static to dynamic. Based on the data collection of computer graphics, this paper carries on the innovative design of art exhibition space from plane to three-dimensional.

2.2.1. Computer Graphics Data Acquisition. Art space display design has independent object element (exhibition object), space element (space), and sense element (people). Through computer machine learning, the art space design can think like a designer, and the computer can collect the image data of the space and exhibits. Through different design methods, the whole space is automatically partitioned layout and art exhibit layout display.

Using computer image data acquisition technology, the "object elements" in space design are expressed in the form of matter elements. It is an ordered triplet composed of the quantity $C(i)$ of $A(i)$ about $B(i)$, with object $A(i)$ as the object and $B(i)$ as the feature. The formula is as follows:

$$F(i) = [A(i); B(i); C(i)]. \quad (1)$$

As the basic element of description, it is called one-dimensional matter element. $A(i)$, $B(i)$, and $C(i)$ are called the three elements of matter-element i, and the binary group formed by $B(i)$ and $C(i)$ is called the feature element of matter-element $A(i)$. The objective entity part of artistic space design can be expressed by object metadata.

$$F(i) = (\text{pillar}; \text{height}; 7\,\text{m}), \quad (2)$$

$$F(i) = (\text{exhibits}; \text{quantity}; 500), \quad (3)$$

$$F(i) = \left(\text{showroom floor}; \text{area}; 1800\text{m}^2\right). \quad (4)$$

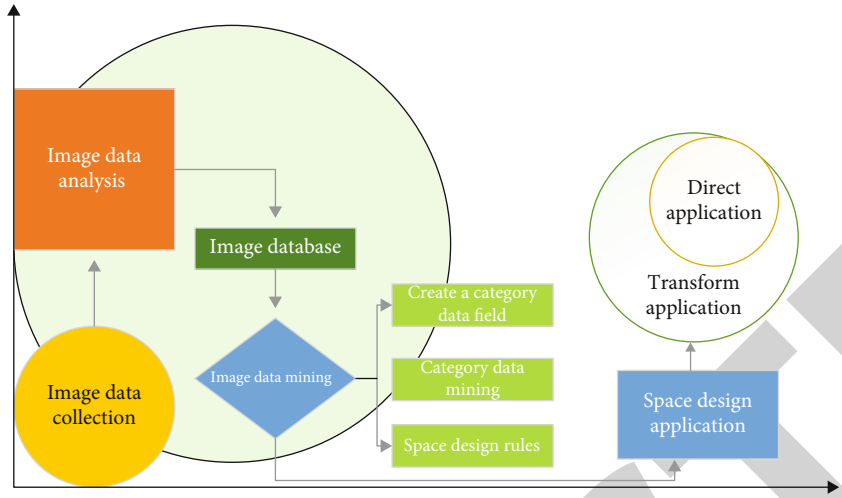

Figure 2: Design method application flow chart.

The entity functional area composed of specific elements is the functional area of art space design category. Compared with the flow, the partition space belongs to the solid part of the interior of the building, which can also be expressed in the way of matter element and one thing and one sign.

$$F(i) = (\text{cultural display area ; size ; } 80\text{m} \times 100\text{m}), \quad (5)$$

$$F(i) = (\text{interactive experience area ; size ; } 65\text{m} \times 45\text{m}), \quad (6)$$

$$F(i) = (\text{projection area ; size ; } 10\text{m} \times 10\text{m}). \quad (7)$$

In addition to the one-thing-one-data representation method, the one-thing-multiple-data representation method can also be applied.

$$F(i) = \begin{bmatrix} \text{Cultural display area ; size ; } 80\text{m} \times 100\text{m} \\ \text{Cultural display area ; area ; } 8000\text{m}^2 \\ \text{Cultural display area ; height ; } 7\text{m} \\ \text{Cultural display area ; towards ; south} \end{bmatrix}. \quad (8)$$

In addition, the style, texture, light and shadow, color, and other designs of the art design space can be collected by image data to establish a database.

2.2.2. Design Method Application Process. The application flow of the design method is shown in Figure 2. It mainly includes three aspects: image data acquisition, data mining methods, and design and application.

(1) Image data acquisition is the prerequisite of data mining. In spatial design, although some data are very clear, data mining as some goals is not useful. For example, for the information "a corridor 1.5 meters wide," it is difficult to get accurate information about the scale of the corridor from the size data of 1.5 meters alone. If the basic data form can be changed, the data of absolute size can be transformed into relative scale relation data, such as the data form of aspect ratio or aspect ratio, the description of scale, and scale feeling can be carried out

(2) Data mining is a basically independent data mining process. It relies on computers to process and analyze image data, find intelligently organized data, and mine and extract regular patterns. In the face of the specific design problem, the design strategy is changed to make the in-class data or interclass data change in form and content and category transformation, which makes the classification mining dynamic

If the content of the design expression is set as the universe of discourse V, and any content $p \in , x \in f(p)$ in the space indicates that the design meets the actual requirements, the function of the universe of discourse V is expressed as follows:

$$T(E) = \{(p, x, x) | p \in V, x = f(p) \in R\}. \quad (9)$$

Accordingly, the category data domain is established, which meets the design requirements of the positive domain.

(3) *Design and Application.* Design application is a process of extending and applying the design knowledge mined based on the extension of data mining. In the actual design application, there may be some contradictory problems, and it is necessary to transform the design elements, the theory domain, and the association criterion, so that the transformed content can meet the specific design requirements. At the same time, making transformation realize the purpose of guiding design also accords with the uniqueness of design

2.2.3. Innovative Exhibition of Art Space Design. The core idea of artistic space design lies in innovation and continuous breakthrough in the original concept, understanding, and form [19]. Modern exhibition space design is constantly trying to extend the communication between visitors and

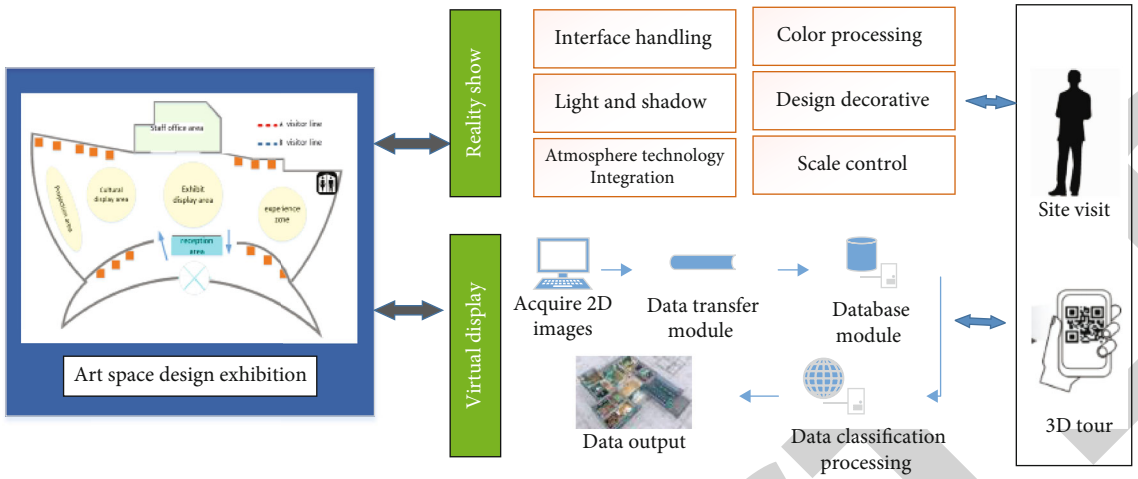

Figure 3: Art space design display architecture diagram.

Table 1: Experimental configuration.

	A computer	A smart phone
CPU	Intel(R) XEON(R) CPU E7-2683 v3 @ 2.00 GHz (28 cores, 56 threads)	QCOM Snapdragon 888 4G
RAM	62 GB	8 GB
GPU	NVIDIA GEFORCE GTX1080Ti	QCOM Adreno660
Hard disk	3.1TB SSD	256 GB

exhibits. Computer image data acquisition technology has the possibility of expansion and transformation at many design nodes, providing innovative thinking and innovative methods for art space design, flexibly guiding the practical problems faced by design, and providing innovative strategies to solve practical design problems. Figure 3 is the architecture diagram of art space design.

As shown in Figure 3, artistic space innovation display is an art form that uses space to tell stories. It is mainly divided into two aspects: real display and virtual display.

Reality display: it is mainly aimed at viewers who can go to the exhibition hall. In the physical scene, the computer image data acquisition technology is used to collect the shape, area, color, light and shadow, exhibits, and other data factors in the physical space. Through data transmission and processing, the display space is filled in, and automatic partition layout is formed to display the overall spatial functional layout. The space focuses on the following aspects of the design.

(1) *Interface Processing*. In the scheme design, the ceiling is an important part of interface processing, which plays an important role in creating space atmosphere. Proper treatment of the top surface can not only beautify the interior environment but also create a rich and colorful artistic image of interior space. In the scheme design and material selection, it should be practical, safe, and beautiful and convey a certain artistic atmosphere

(2) *Color Treatment*. In color treatment, if the exhibits are heavy color products, light color tones are used to set off the products in space, and similar colors similar to the products are used locally. In the design of the space, the interior main color comes from the extraction and application of the color of the experience object, so as to foil the emotional atmosphere of the space

Table 2: Multiple interface area identification.

Number of interfaces	1	2	5	10	20
Number of detection times	100	100	100	100	100
Number of correct times	98	97	94	92	90
Number of missed times	2	2	4	5	7
Number of errors	0	1	2	2	3
Correct rate	98%	97%	94%	92%	90%

(3) *Light and Shadow Design*. Light sense plays an important role in visual information transmission, which is more attractive than pictures and forms. Natural light is introduced in the creation of light and shadow, and light and shadow design is carried out in combination with space function and structure. Through conscious processing, the unique light and shadow atmosphere in the space is formed to bring more emotional changes to the audience

(4) *Decorative Atmosphere*. Artistic Chinese paintings, characteristic posters, and small cultural elements are used as decorative elements in the space. It is not only a form of artistic expression, but also

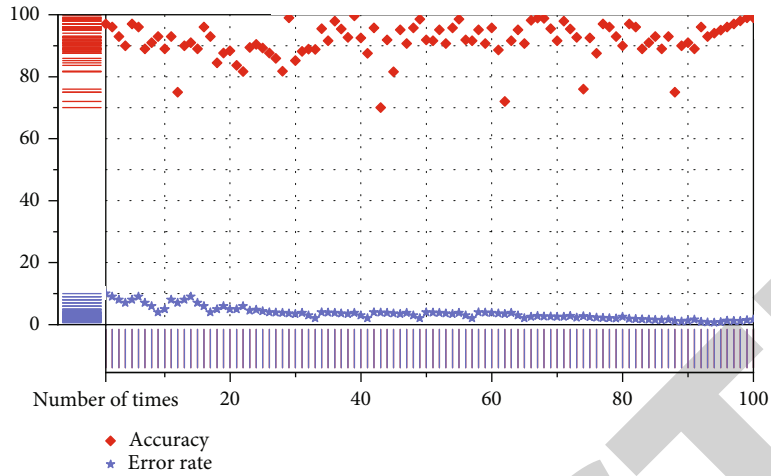

Figure 4: Statistical map of multiarea measurement in space.

conducive to improving the artistic atmosphere of the space and creating a good experience atmosphere

(5) *Integration of Science and Technology*. Modern display technology is integrated into the space. There is a 3D viewing space for the projection to explain the story behind the work and trigger the audience's thinking to bring reflective experience. The use of electronic navigation self-service system can help the audience to easily and quickly understand the theme content of space experience

(6) *Scale Control*. In the space design, the top surface adopts different processing methods according to different space sizes to maintain a good sense of spatial scale and improve the identity of the audience experience. According to the law of visual flow, it is concluded that the gold display in the exhibition space is generally between 800 mm and 1600 mm. It is not easy to observe or touch the audience less than 800 mm, while it is easy to cause visual fatigue if it is too high above 1700 mm

Virtual display: an exhibition is limited by time, place, area, and other factors. The uncertainty caused many people to miss out on many excellent exhibitions because they were unable to visit the venue in its entirety. Virtual display is mainly for viewers who cannot visit the site. The charm of computer image data acquisition technology lies in making design knowledge be used flexibly and on demand. The art space design exhibition will use the computer to collect 2D image data, use the 3D reconstruction model made on the PC side, add the first person camera, use the mobile phone gyroscope to match the user's head movement, write the code of visual gaze jumping function, and select the appropriate anchor point in the model to set the scene jumping. In this section, further "immersive" viewing is performed by placing the product in a mobile VR box. By creating virtual models of the exhibition to be placed on mobile phones, a preview mode of the exhibition can be presented on mobile phones by scanning a QR code. There are three modes on the bottom of the phone: product info, effect preview, and VR. Users can click to switch to different viewing modes. According to the content of the virtual scene, the corresponding behavior achieved human-computer interaction, including gestures, microexpressions, touch, and language. Finally, according to the operation feedback information, it is output to the visitors in a virtual form, so as to form a feedback loop mechanism between visitors and interactive device until the end of the experience.

Table 3: Statistical table of material color detection.

Material color	Red	Green	Blue	Grey	Purple
Number of detection times	100	100	100	100	100
Number of correct times	93	90	92	92	94
Number of missed times	3	4	4	4	1
Number of errors	4	6	4	4	5
Correct rate	93%	90%	92%	92%	94%

2.3. Experimental Design. In this experiment, the computer image data acquisition system is used to collect data from the display space to form a data set. According to the display purpose and spatial data, the art space display design is an automatic spatial layout design. Experimental results were analyzed using evaluation indicators by training spatial and color data sets. The system test environment includes a computer and a smart phone. The experimental configuration is shown in Table 1.

In the experiment, use the correct rate, error rate, and average error to evaluate and analyze the experimental results. The specific indicators have the following meanings:

Accuracy rate: it refers to the proportion of the measured values that meet the limited conditions among the multiple measured values under certain experimental conditions, and is often expressed by the coincidence rate. That is, the accuracy rate = the number of measured values that meet the conditions/the total number of measured values $*$ 100%.

Error rate: it is the ratio of the number of classified samples to the total number of samples.

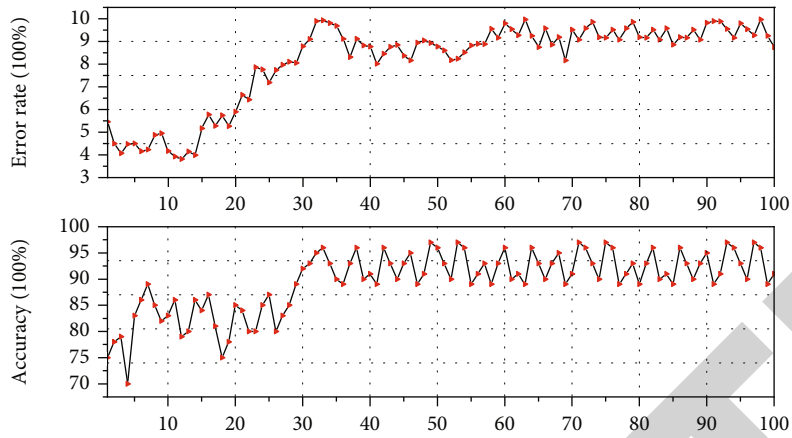

Figure 5: Color detection chart of various materials.

Average error: the so-called average error refers to the arithmetic mean of the random errors of all measured values measured in equal-precision measurements.

3. Results and Analysis

3.1. Spatial Data Acquisition and Analysis. In the process of image data collection, target recognition and target location are the focus of computer image technology, and the core technology of target recognition and location is image information processing [20]. In order to verify whether the computer image data acquisition technology in art space design has a high ability of target recognition and location, the image data acquisition technology is simulated. Taking exhibition space as the experimental object, the computer image data acquisition system is used to collect the image information of exhibition space. This paper collects 2000 exhibition space design cases from 2015 to 2021. After more than 1,000 experiments, the analysis of the simulation experiment was completed by calculating the recognition accuracy, recognition error rate, and nonrecognition rate of the acquisition target through statistical space area and area measurement. Table 2 shows the recognition of multiple interface areas.

The results show that the accuracy of image data acquisition technique is higher when the number of interface in visual field is small. When the number of in-field interfaces is less than 5, the accuracy rate is above 94%. With the increase of the number of interfaces in the field of view, the detection accuracy will decrease, but it can still reach 90% accuracy when there are 20 interfaces in space. Overall, the accuracy can meet the requirements of art space design.

In the data acquisition system, it switches from area quantity detection to area measurement, takes various interfaces of different areas as the object to be measured, receives area information through the system, makes multiple measurements, respectively, and makes statistics on the measurement results. The statistical results are shown in Figure 4. The results show that the average error of the spatial area measurement algorithm for single material is 3.63%, and the measurement accuracy is more than 91%.

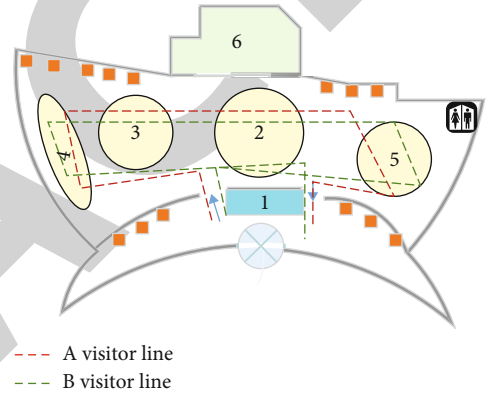

Figure 6: Two spatial moving line designs.

3.2. Color Data Acquisition and Analysis. From the perspective of color, the composition of space is also composed of multiple color blocks [21]. When experiencing the color selection of the internal environment of the space, we should consider highlighting the color treatment of the product and using color to stimulate the audience, so as to increase the unique charm of the space and bring better experience to the audience. In order to verify the image data acquisition technology, a single material (decorations and exhibits) color detection was used. Set the color threshold in the system, the user can click the color in the system to automatically read the color threshold, set the number of channels to 32, calculate the number of lines to 100, and set the channel threshold to 500 pixels. The single material with different colors is tested for color, and the correct algorithm parameters are set. Multiple experiments are conducted, respectively, and the detection results are counted, as shown in Table 3.

In the experiment, the material to be tested for color is mixed with the color mixture. Put a variety of materials on the conveyor belt at the same time, so that the data acquisition system can view a variety of materials at the same time, and set the correct algorithm parameters. The statistical results are shown in Figure 5.

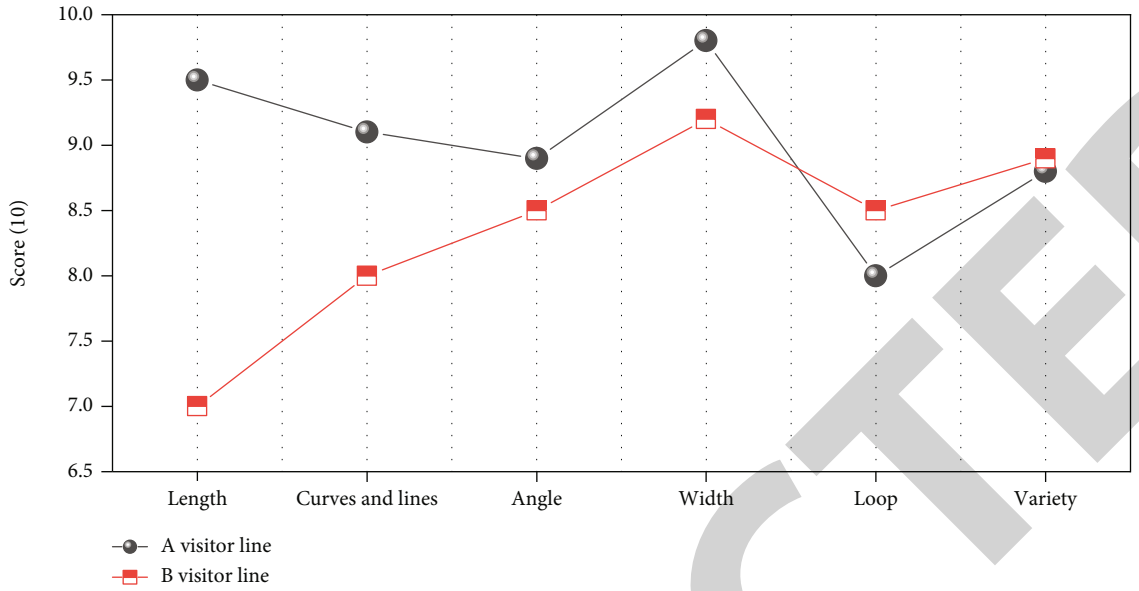

Figure 7: Evaluation diagram of spatial moving line factors.

The results show the image data acquisition technology in this topic in color detection in many implementations of missed detection and error detection, but the average detection accuracy of a single material can reach more than 92%. The color detection accuracy of a variety of materials has decreased, but it can also keep above 90%, and the average error is 8.12%.

3.3. Display Spatial Line Analysis. The ultimate purpose of art space display design is to show exhibits or convey some information to people, so the art space display design should be based on people's activity track design space moving line. Spatial moving line refers to the line connected by the points that visitors move in the space. The design of moving line is aimed at guiding visitors to visit and walk in the exhibition space, so as to reasonably plan the design layout of the exhibition space. In this paper, the image data acquisition device takes FPGA as the control core, adopts LVDS and Ethernet as the transmission interface of image data, and uses the 422 interface as the communication interface to realize the transmission and reception of commands and PCM data. The spatial movement lines of more than 1,000 exhibition people are tracked through multiple image acquisition devices and input into the image data acquisition system, and then, the data is mined and tracked. According to the actual space of the exhibition, continuous training and adjustment finally formed the following two spatial moving line design drawings (see Figure 6).

It can be seen from Figure 6 that moderate length, combination of curve and straight line, processing of angle change, slow change of width, setting of loop, and orderly change in the display space are also factors that need to be considered in moving line design. By evaluating 6 factors of spatial moving line, the factor evaluation diagram is obtained, as shown in Figure 7.

As can be seen from Figure 7, the moving line of the whole space A is simple and clear, belonging to the open space moving line of expanded layout. The length of A moving line is suitable, so that visitors can appreciate all the main points of exhibits when passing by and achieve the best visiting effect with the smallest distance.

3.4. Space Design Functional Zoning Scheme. This exhibition space design is a space experience design. According to the spatial design, the sense of experience will be further integrated into the exhibition space, so that people can experience and feel the artistic atmosphere and enhance the visitors' sense of personal experience and in-depth understanding of the exhibit culture. People generally visit and walk step by step along the visual effect of exhibits. Computer image data acquisition technology and traditional design techniques are used to divide the functional layout of the exhibition hall, as shown in Figure 8.

Exhibition space design features include the following: the exhibition, staff office, reception hall functions, cultural functions of display, rest, toilet, experience, and projection functions, such as fire escape function space design; the above two kinds of design schemes are designed to meet the regular exhibition space visitors experience the functional requirements. However, it is necessary to further evaluate and compare the average time consuming, lighting, layering, functionality, experience, innovation, functionality, minimum modification steps, and minimum modification time in art space display design (see Figure 9).

It can be seen from Figure 9 that the average time of computer image data acquisition technology is short, the design scheme is reasonable, and the space design is transparent, clear, and simple. The layout process is clear, and the exhibition area is rich in content, which can be relatively independent, but also has a certain relevance. After the scheme is generated, professional designers only need to

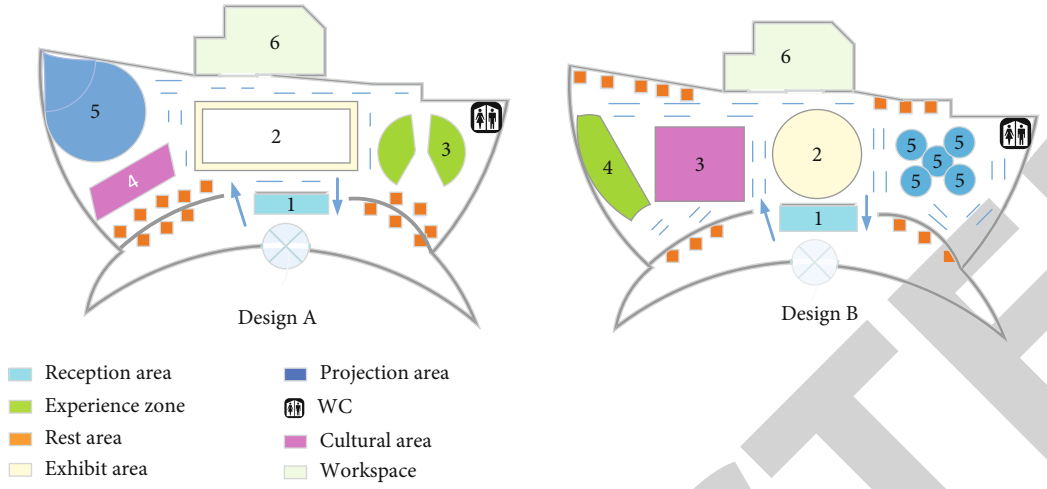

Figure 8: Space design functional zoning scheme comparison.

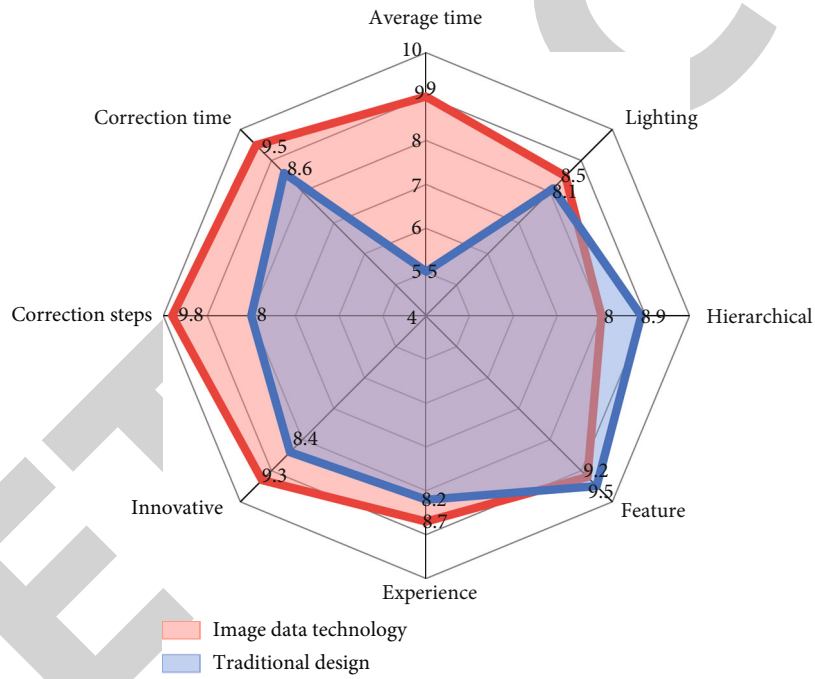

Figure 9: Exhibition space design evaluation comparison.

make fine adjustments to complete the functional zoning design of the art exhibition space, which saves a lot of manpower and time and can provide users with more choices.

4. Conclusion

In today's intelligent era, the rapid development of science and technology provides a more abundant expression language for space art design. In this context, the method of art space display design advocates the integration of openness and innovation [22]. This topic uses computer image data collection technology to think about the innovative design method of exhibition space, centering on the three elements of "people-exhibition objects-space," combining the real and virtual environment to build a natural and harmonious three-dimensional exhibition space. Space was the basis of exhibition space design, in the experiment focus on space and color data collection, analysis of the moving line, and functional layout of the exhibition space. Finally, it was found that the area measurement accuracy of the artistic innovative space design method based on computer image data collection can reach more than 91%, and the correct rate of color detection can be maintained at 90%. The visiting route is clear, and the functional zoning design of the art exhibition space can be completed in a short time. It saves a lot of manpower and time. Innovative design methods bring a more attractive experience to the expedience.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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