Research Article
Visual Space Design of Digital Media Art Using Virtual Reality and Multidimensional Space

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To effectively develop digital media art to a higher level, creators should consider incorporating VR into it to improve the quality of digital media art works, especially in light of the continuous advancement of science and technology. This paper explains the uniqueness of digital media artistic design and discusses the artistic creation method of digital media based on virtual reality. In addition, he proposed a virtual reality-based visual space design method for digital media art. This paper examines and researches the spatial visual form in digital media art design from the perspective of visual perception. This paper explains the elaborated contents in detail with design works, beginning with the construction of three-dimensional space, four-dimensional space, and surreal multidimensional space. People can gain aesthetic uniqueness by combining digital technology. Theoretically, the practice of visual space design is investigated in order to provide a reference point for digital media art to move forward in terms of timeliness, diversification, and innovation.

1. Introduction

With the development of society and the progress of technology, high-tech products have begun to popularize and spread in life. In recent years, digital new media technology has been widely circulated in society, and artists in various fields have begun to apply it to their own creations [1]. The development of science has greatly changed people’s lives, and at the same time, information dissemination and media styles have developed to a new stage. When we combine virtual reality (VR) with digital media art, the technology of virtual reality is a way of expression and a medium of art communication [2]. This technology is an interactive media style, and digital media art is an artistic form that enables participants to complete this interactive experience through VR. At present, the display design cannot see the shadow of traditional culture, but more is to adapt to the modern society and use high-tech technology to better combine digital media with display design [3]. The application of digital media technology in display design has greatly changed the language and design methods in display design. It has a great influence on the traditional display design methods and design concepts [4]. In the current era background, the creative inner strength of digital media art is gradually expanding, the information capacity is gradually expanding, and the functions are also increased. But from the perspective of future development, digital media art still cannot show a brand-new development trend. VR makes digital media show more novel, interactive, immersive, and diverse artistic effects in content and methods, and at the same time, it provides more development space and possibilities for artistic creation.

The iteration of information technology provides more possibilities for the development of digital media. Artistic feeling becomes more intuitive and three-dimensional as a result of communication and penetration between art and science. The continuous advancement of information technology is responsible for a large number of new artistic products with aesthetic and innovative features [5]. VR has become widely used in many industries as a result of the rapid development of emerging science and technology such as 5G wave, artificial intelligence, and big data. Traditional digital media art creation typically employs a computer-aided design platform to create corresponding works, and
its output is usually a single video or set of graphics and images. The use of virtual reality in digital media artistic creation broadens the range of possible forms and angles [6]. This combination can not only shorten the distance between the experiencer and the works of art, but it can also help the experiencer better understand the information that the artist is attempting to convey in the works. The works of art we see in digital media art are frequently linked to dynamic images [7]. We can interact with the works using the sensing device while watching this dynamic image when digital media art is combined with virtual reality technology. The sensing device captures the data signals of the experiencer’s behaviors, gestures, head movements, and even eye movements and responds quickly, allowing the experiencer to fully participate in the interactive process [8]. This paper focuses on the relevant strategies of contemporary digital media art creation through the lens of virtual reality. In addition, the design method of digital media art’s visual space was presented.

Display design is an important discipline in the art world. It is at the cutting edge of science and technology, promoting not only the advancement of science and technology but also the advancement of display design [9]. Technology and display design are two separate disciplines that can coexist. A good combination of the two, on the other hand, will give it new life. VR is constantly updated and developed, from simulations of reality to complete immersion of participants, resulting in an evolutionary trend in the art space with dual reality [10]. People are increasingly unable to distinguish between the two realities in everyday life, blurring the line between virtual space and the real world, and between digital technology and artistic form. The rise of virtual reality (VR) has the potential to improve the shortcomings of previous digital media art creation and promote its close integration with VR on the basis of original functions, allowing for the creation of a variety of new digital media art works [11]. This paper explains what virtual reality is and how it can be used to create digital media art. It is hoped that by combining the characteristics of digital media with scientific research theories of space in the fields of physics and psychology, as well as the expression of space in painting art, it will be clear that the expression of space in modern visual communication design should serve more than just an aesthetic function. After gaining a rational understanding of the concept of space, modern science and technology can be used to realize the perception that space has for people on a variety of levels. The correct design methods are summarized through in-depth research on the integration of multimedia technology and display design, laying a good foundation for future design.

2. Related Work

Digital media art design is thought to be based on digital media art, according to literature [12]. Visual art, design, computer graphics, and media technology all come together in this field. Digital media has the characteristics of mass culture and social services at the same time. Digital media art, according to literature [13], is a form of artistic creation and display that combines science and art. The development of such a novel art form should be based on appropriate design methods as well as a high sense of professional responsibility. Literature [14] developed a communication system framework based on virtual reality and interactive images, which was then gradually improved through project practice. According to the literature, content innovation drives digital image design innovation. We can build a sustainable and diverse society with regional and human characteristics in the context of globalization by utilizing the Internet to construct a digital image dissemination model. Literature [15] describes the technical characteristics and transmission channels of digital images, as well as nine steps in the digitization process. It also summarizes the cultural and ecological characteristics of digital images in the context of network media, resulting in a slew of pressing issues that need to be addressed, with the article combining cases and practices to find solutions. According to literature [16], only by rethinking digital media art creation in terms of thinking innovation and applying virtual reality technology to creation can it truly bring about the innovative development of art creation and provide viewers with a more realistic and touching art experience. Virtual reality and interaction, the most visible manifestation of modern information dissemination, are classified and analyzed in literature [17]. Literature [18] examines the design expression of visual space in digital media and is based on the art design theory of visual communication. [19] discusses how to study the social innovation of images via network carriers using virtual reality and interaction. According to literature [20], creators can create a wide range of digital media art works using virtual reality technology, which provides a good creative platform for expanding people’s horizons and enhancing their creativity. This status quo has changed due to technological advancements. Digital media art, according to literature [21], is a multimodal information communication method. According to the literature [22], the creator is at the center of traditional digital media art, and the work and the creator have a closer relationship. The viewer and the work are separate entities, and the interactivity is not optimal. However, with the advancement of virtual reality technology, this situation has changed. The most important thing for digital media art creation, according to literature [23], is to keep innovating in order to truly make viewers have a better emotional and sensory impact. Virtual reality technology can help this art form a stronger audiovisual impact by providing a great support for its innovative creation.

Based on previous research, this paper introduces visual perception in psychology into design thinking. In addition to its expression in art and culture, the concept of space also involves the concept of space-time in physics and the scientific research theory of visual perception in psychology. It also introduces the specific concepts of VR and digital media art, explains and analyzes the interaction between them in the creative process, and determines their connotations, relationships, advantages, and characteristics. This paper probes into the concrete measures and practical significance of VR in the creation of digital media art, so as to better promote the creation and development of digital media art.
3. Methodology

3.1. VR. Virtual reality (VR) is a simulation technology that combines computer language, graphics, sensing, and other modern disciplines. Creators can create 360-degree three-dimensional space, assist professionals in expanding associative space at will, and fully display imaginary buildings, objects, and landscapes in three-dimensional space images using this technology [24]. At the same time, various scenes or parts expected can be presented interactively and stereoscopically with the help of related equipment, giving people a rich sensory experience. VR can affect many of a person’s senses at once, creating a fully virtual environment. Human-computer interaction is now possible thanks to this technology.

VR technology can provide a very good immersive experience for the experiencer, simulate the replication of the environment, and support interaction between the experiencer and the environment based on its own characteristics. Its basic nature is a man-machine partnership. Immersion means that when people use virtual reality devices, they will focus more on the virtual scene they have created. A real environment atmosphere is created based on the participants’ various sensory tools, allowing participants to communicate with the virtual world through special data helmets, eyes, and other means, allowing experiencers to experience the virtual world, and allowing them to gain more levels of sensory experience by immersing themselves in the environment. It is regarded as a key indicator of how well a virtual reality environment performs.

Interactivity refers to the ability of the user to initiate interactive behaviors between people and between people and computers, as well as to perceive various interactive activities realistically through devices. This interactive method is more contagious than traditional graphic interaction, allowing people’s senses to be exposed to new experiences and allowing creators to be more versatile in their creation of novel works of art [25]. Under the backdrop of a virtual environment, truthfulness refers to exploring unknown problems based on sensibility and rationality, as well as learning and recognizing many new things and knowledge. VR has the potential to transcend time and space constraints. The playing field for digital media creators has widened. The channel between the future world, the unknown world, and the ideal world can be opened in virtual reality, resulting in the creation of a new space. Creators can also finish new creations based on the virtual reality environment [26]. Augmented reality virtual reality entails not only using virtual reality to simulate the real world but also using it to enhance participants’ feelings about the real world, i.e., feelings that are imperceptible or inconvenient in reality.

There are two ways to achieve virtual reality. The first type is virtual reality on a computer. The term “desktop virtual reality” refers to a virtual environment created by calculating data and interacting with the display [27]. Participants must use input devices, view the virtual realm in 360 degrees through a computer screen, and manipulate the objects therein. Participants in this mode of participation, however, will not be completely immersed because the real world will still be present. The lack of real-world experience is the biggest drawback of desktop virtual reality, but the cost of use is relatively low. As a result, it is widely used.

The second way to realize virtual art is immersive virtual reality. Immersive virtual reality can bring an unprecedented experience to the experiencer and make the participants feel completely immersed in the constructed virtual space. This experience requires the experiencer to wear the device for converting data to complete the experience. It uses a helmet-mounted display or other devices to close the participants’ vision, hearing, and other feelings. And providing a new and virtual sensory imagination means that users can get perceptual and rational knowledge from the environment of qualitative and quantitative comprehensive integration by using VR system, thus deepening concepts and sprouting new ideas.

VR technology makes people change from passive to active acceptance of things. People actively seek information through perceptual knowledge and rational knowledge from the environment of integration of qualitative and quantitative knowledge, deepen concepts, and generate new ideas and ideas in cognition. With the support of VR technology in the creation of digital media, the creation of digital media has more expression in form, and creators can realize a more prominent sense of substitution, thus supporting the development of digital media art from multiple dimensions. Compare the actual situation and reproduce the world environment and structure through virtual, simulation, and restoration [28]. The effective use of VR in the creation of digital media art and its advantages not only make the creation form of digital media art more convenient, more humanized, and more direct but also make the media works under VR feel more substituted, and the direction of digital media art creation is more diversified and has more room for development.

3.2. Digital Media Art and Visual Space. The creation of various audio-visual animation works, which belongs to the use of scientific and technological means to serve artistic creation, is based on the combination of computer technology and art, supported by digital technology, and the creation of digital media art. The visual design application scope in media communication primarily refers to visual and auditory media. Visual media, literally, refers to media that rely on vision to receive information and most commonly refers to traditional print media. Audio-visual media are those that can combine vision and hearing to present information.

The realization of digital media technology in specific creative activities inevitably requires the assistance of various scientific and technological means, and these scientific and technological means also help the creation of digital media achieve richer contents and forms. With digital media, it is possible to fully combine art and technology. Because of its diverse projects, forms, sensory stimulation, and strong interactivity, digital media art can be developed to a scientific and advanced level in practice. At the same time, scientific and technological integration can meet the needs of artistic creation. When we combine virtual reality with
digital media art, we have a way of expression, a medium of art communication, and an interactive media style. Digital media art is a type of art that allows participants to complete this interactive experience using virtual reality. This combination can not only shorten the distance between the experiencer and the works of art, but it can also help the experiencer better understand the information that the artist is attempting to convey in the works. Figure 1 shows multimedia and common elements.

Art is any activity or object that can make people feel beautiful. Art design is the process of bringing people’s aesthetic, spiritual, and emotional needs to life through artistic thinking and methods. Designers use digital technology to create or spread digital media, combining the form and content of art with social, economic, cultural, market, science and technology, and other factors to provide services for people’s needs in information acquisition and exchange, communication, and idea exchange. Digital media art can be very flexible and full in its expression, and the senses can be greatly stimulated. It is a versatile digital technology application in the field of artistic creation. IT, in particular, plays a critical role in the development of the Internet and the IT industry. Nature, humanities, social sciences, and other disciplines’ knowledge and technology are combined in digital media art. Modeling, design, image processing, information communication, and other technologies are all involved. Digitalization is the primary mode of communication, and it is a modern art form based on the traditional media industry and incorporating contemporary humanistic values.

If the creation of digital media art can get the blessing of form and content through VR, it can form more diversified expressions in content, form, etc., so the future development of digital media art has excellent development prospects. For human beings, the existence of space can be divided into two categories: physical space and psychological space. From the related scientific research of psychology, we can know that our visual experience is generally influenced by one or another sense of direction. This kind of force experienced by watching nonphysical dynamic objects is not based on the viewer’s personal experience and then comes from judgment. This force exists in all perception processes of various colors, sizes, shapes, positions, and other elements. Because these elements have quantity and direction, this tension is described as “psychological force.” Compared with other art forms, the greatest feature of digital media art is that digital media technology can be fully applied to the creative process, which is also the main way to distinguish digital media art from other arts. The composition of digital media art design is shown in Figure 2.

In the construction of visual space, the rational layout of light can not only establish the sense of spatial integrity and spatial order but also make the shape of objects in space clear. For example, in the picture, strong side lights are used to represent objects and spaces, and all the lights are concentrated on the same side, and the other side is completely dark. As a result, light and darkness are concentrated on one object, and the light and shadow formed by this combination are arranged, and the viewer’s line of sight is divided into two halves, which is less likely to cause visual confusion than light and shadow are distributed in many places, thus simplifying the spatial structure of vision.

Compared with the previous artistic methods, the artistic creation of digital media is more flexible in the choice of creators, and the artistic methods, commerciality, and artistry are more prominent. It has been widely used in the current production of film and television works, stage performances, music production, and game project development, forming a very good aesthetic value and application value.

Digital media art design is the integration of art and technology. The virtual reality space built by VR enriches the audience’s experience of watching art works. Artists who use VR can give full play to their imagination, make it possible to build scenes that were impossible in the past, and realize experiences that were impossible in the past. It makes the artistic space built by digital media artists become “within reach” from “out of reach” before, while viewers can further communicate and interact with artistic works through their immersive experience, so as to get closer to the work more truly and have a deeper understanding of the work.

3.3. Visual Space Design of Digital Media Art. With its visual advantages, VR can form great advantages in the dimension

![Figure 1: Multimedia and common elements.](image-url)
display of various items. Viewers can experience their different dimensions in the process of viewing, and at the same time, they can conveniently execute various operation instructions. Digital media works of art and viewers have formed a very good interactive relationship. In design, "time," as the fourth dimension of space dimension, brings the movement and change of things to space. All kinds of resistance that an object is subjected to in the process of motion will affect its shape, such as being stretched or squashed. The visual experience brought by this kind of deformation makes people feel the force of objects with similar shapes and makes the visual shapes in static pictures have a sense of movement in the direction. Therefore, in the static picture space, the exaggeration and deformation of the visual form can be used to imply the movement, and this "dynamic potential" can realize the existence of time in the picture. This use of "dynamic potential" to express the four-dimensional space can be seen in the narrative picture, which contains three elements: time, place, and object.

VR can assist designers in providing better opportunities and platforms for expressing their personal ideas and transforming digital media creation into a powerful tool for self-expression. Creators’ lives, thoughts, and emotions can be fully expressed on the platform of digital media creation, allowing them to fully display their personal abilities. The concept of time in space has been updated as a result of more scientific and in-depth studies of motion and the human visual system. Raindrops appear to be connected into a line when falling, and this nonexistent line is the raindrops' movement track, thanks to the visual persistence of 0.10.4 seconds in human eyes’ visual perception of moving objects. The human eyes take about 0.50.7 seconds to perceive a clear visual image of moving objects, and moving objects with a time of less than 0.4 seconds leave no significant impression. As a result, the visual perception brought on by the speed of moving visual objects can be classified as clarity or fuzziness. As a result, in order to reflect the existence of time in a static image, the fuzziness introduced by motion can be used to express the image in four dimensions.

After many times of downsampling, the image pyramid is built. In this way, different sizes of an image are obtained, and then, Gaussian blur operation is performed on these images with different sizes.

\[ L(x, y, \sigma) = G(x, y, \sigma) \ast I(x, y), \]

where \( \ast \) is convolution operation.

\[ G(x, y) = \frac{1}{2\pi\sigma^2}e^{-\frac{(x-m)^2+(y-n)^2}{2\sigma^2}}. \]

\( I \) is the gray value of the image at coordinates \((x, y)\). The extreme value of scaled normalized Laplacian function \( \sigma\nabla^2 G \) is a fairly stable feature point, and the Gaussian difference function is very similar to Laplacian function. Gaussian difference method has a small amount of calculation, so it is replaced by Gaussian difference function, as shown as
follows:
\[ D(x, y, \sigma) = (G(x, y, k\sigma) - G(x, y, \sigma)) \ast I(x, y) = L(x, y, k\sigma) - L(x, y, \sigma). \]  
(4)

Therefore, the images of different layers are subjected to Gaussian convolution operation with different parameters, so that the images of the same scale contain multiple images. Then, these images are subjected to differential operation. Then, compare the size of the pixel at \((x, y)\) with that of its eight neighbors and 2*9 pixels corresponding to the upper and lower two images with the same size and different convolution parameters, and check whether it is an extreme value, so as to preliminarily detect the feature points. Then, the scale space function is expanded by Taylor formula. The interpolation method is used to further obtain more accurate feature points.

With VR, creators can unleash their creativity, get closer to their work, and gain a deeper understanding of it, allowing them to create scene construction experiences that were previously impossible to achieve. Through immersive experience, the previous "out of reach" viewing mode can further communicate and interact with art works, enriching the audience’s experience of watching art works. This interactive mode is extremely important for art works and the expression of their vitality, as it allows the audience to better understand the art works and feel as if they are guiding themselves. The screen interface is the dynamic carrier of images. The change in visual design thinking is determined by the information receiving characteristics of people on the screen interface. The mainstream is considered to be based on user experience. As a result, human engineering research has been conducted to address various needs of people—information receiving and feedback objects. One of the most important aspects is the importance of human eyes’ “central vision” when watching.

The camera coordinate system has the following mapping relationship with the world coordinate system:

\[
\begin{bmatrix}
X_c \\
Y_c \\
Z_c
\end{bmatrix}
= R
\begin{bmatrix}
E - T(1) \\
G - T(2) \\
N - T(3)
\end{bmatrix}
\begin{bmatrix}
r_{11} & r_{12} & r_{13} \\
r_{21} & r_{22} & r_{23} \\
r_{31} & r_{32} & r_{33}
\end{bmatrix}
\begin{bmatrix}
X_g \\
Y_g \\
Z_g
\end{bmatrix},
\]  
(5)

where \(R\) is the rotation matrix of the camera relative to the east-north coordinate system at its own position. \(T\) is the position vector of the camera relative to the origin of world coordinates. \(r_{ij}(i, j = 1, 2, 3)\) is the element of the \(i\)-th row and \(j\)-th column of the rotation matrix \(R\). According to formula (5), there are

\[ X_c = \frac{r_{11}X_e + r_{12}Y_e + r_{13}Z_n}{r_{21}X_e + r_{22}Y_e + r_{23}Z_n}, \]

(6)

Given a certain control point \(Q\) in the initial public field of view of the dynamic stereoscopic vision system, its projection point on the imaging plane of a single camera is \(q(u, v)\); then, according to the camera perspective imaging model, there are

\[ \frac{X_e}{Y_e} = \frac{u - u_0}{v - v_0}. \]

(7)

Combined with formulas (6) and (7), there are

\[ \frac{r_{11}X_e + r_{12}Y_e + r_{13}Z_n}{r_{21}X_e + r_{22}Y_e + r_{23}Z_n} = \frac{u - u_0}{v - v_0}. \]

(8)

In the field of digital media art, if VR technology is integrated into creative activities, the way of interaction between people will be expanded, and a two-way and multiway communication platform will be established, so that the artistic innovation of digital media can be better reflected in terms of form and content, and both creators and viewers can feel the agility from it. For viewers, the new way has greatly changed the communication activities and achieved better humanization and emotionalization, so that everyone’s communication can really be realized. For digital media art creation, works can be considered more from the viewer level and can flexibly meet the various needs of viewers, which will make digital media art creation more dynamic and develop better and faster.

In the virtual reality world, the participants’ hearts will be affected by the uncertainty of reality and illusion. People have a strong sense of immersion for the images presented in front of them when they enter the virtual space that exists, and people know the virtuality of this space in their hearts when they enter this virtual space, which causes participants to have an inner psychological emotional contradiction, which will affect the entire experience process. We can also use an action, a color, or an activity in the lens picture as a link between the past and the future to link different lenses to create the natural harmony of visual space in dynamic video. When switching shots, you can also make use of the logical relationship to see how smooth the visual space is. This logic is based on actual human logic. The audience will have intuitive expectations when they watch because of their life experiences. The spatial relationship between different pictures will be harmonious if the picture changes meet this expectation.

4. Result Analysis and Discussion

Digital media technology has brought new changes to display design. Whether it is the change of fashion design, the change of structural technology, or even the change of social thought, we can see the shadow of display design. In the virtual reality of digital media art construction, more attention is paid to the interaction between the audience and the works. The audience can give feedback to the works of art according to their own aesthetic experience and become the creative subject by interacting with the devices in the virtual space, so as to create works that meet their own aesthetic taste and ideal. Implicit, gentle, and poetic emotional
care in visual communication will not have a negative impact on the feedback of information, and the effectiveness of information communication can be realized only if the pleasant aesthetic experience causes emotional interaction in the viewer’s perception.

In digital media, the color model of an image is an abstract mathematical model that describes the method of using a set of values to represent the color of an image. Images can be divided into three color model systems according to their function characteristics. One is the visual color model system, which refers to the color obtained by human eyes’ perception of color to represent the model. Computer color model, also known as colorimetry color model, refers to a color model system for pure theoretical research and calculation of color. Industrial color model system is mainly suitable for practical engineering applications and standards, including image display system, video signal transmission system, and color information storage system. The definitions of these color models are usually similar, but they can play a specific role in different applications.

Figure 3 reflects the weight of each error factor when cameras C1 and C2 are in the initial position, in which the camera focal length and three attitude angles play a decisive role in the reconstruction accuracy of spatial coordinates, and when the roll angle of each camera is 0, the pitch angle and yaw angle of the camera have the greatest influence on the reconstruction accuracy of spatial coordinates.

In the constructed virtual environment, there is a lot of digital information. The computer interface and style features presented by these digital information all change the original aesthetic experience, and this yearning and intoxication will inevitably change people’s aesthetic experience. Applying digital media art to display design breaks the traditional ideas and forms of display space and creates new display space. The existence of design is conditional on having things and places to display; that is, there should be space. The display without space can only be an armchair strategist. Therefore, whether a reasonable space can be designed is of decisive significance to show the overall effect of the design and the communication purpose to be achieved.

Figure 4 reflects the camera focus error and the corresponding root-mean-square error of spatial coordinates, in which the spatial coordinate error has a linear relationship with the focus error, and the spatial coordinate error introduced by camera C1 is larger when a single camera has the same focus error, but the spatial coordinate error introduced by camera C1 is lower than that introduced by a single camera when all cameras have the same level of focus error.

Participants have a new way to accept and understand works of art as a result of their interactive experience with digital media art. The audience’s physical and emotional changes in virtual space will react to the real world, subtly affecting people in real life, including the artists and those who are experiencing art. Modern display design has taken a new direction as a result of the influence of digital media technology. It was only a display for viewing before the development, and it was only a display for experiencing after the development. Experiential display is distinct from traditional display in terms of both content and format. There is no relationship between exhibitors and creators in traditional exhibition design. Individual participation is more important in experiential display design, which is digital media art display design. Exhibitors can interact with works using a variety of sensory systems, including sight, smell, hearing, and touch, and drive the operation of works to become the main body of the display.

The algorithm in this paper is compared with oriented fast and rotated brief (ORB) algorithm and scale invariant feature transform (SIFT) algorithm. Compare their matching speed, the stability of scale change, and the stability of rotation change. The result of rotating image matching is shown in Figure 5.

The results show that the matching speed of this algorithm is obviously better than SIFT and ORB algorithms. In the antirotation performance test, this algorithm can extract more feature points than the other two algorithms. The matching accuracy is slightly higher than SIFT and ORB algorithms. The result of scale matching is shown in Figure 6.

From the results, it can be seen that the algorithm in this paper extracts more feature points than SIFT and ORB algorithms in the performance test of resisting scale change. The matching accuracy is slightly higher than SIFT and ORB algorithms. Fuzzy matching results are shown in Figure 7.

The results show that in the performance test of anti-fuzzy change, the feature points extracted by this algorithm are also more than SIFT and ORB algorithms, and the matching accuracy is close to that of SIFT and ORB algorithms. It can be concluded that the algorithm in this paper can extract more feature points, with fast matching speed and high matching accuracy. Moreover, the feature points extracted in this paper are not as scattered as the other two algorithms. If multiple targets are placed in a simple background, the feature points belonging to one target will get together more. Figure 8 reflects the number of matching point pairs obtained by the three methods after purification in the repetitive test.

For the scene images with mainly rotation changes, this method can also obtain more matching point pairs after
purification, while for the scene images with mainly scale or angle changes. Compared with the other two methods, this method does not get more matching point pairs after purification, but it does not mean that the feature point matching effect of this method is lower than that of the first two methods. It further proves the effectiveness of this method.

The artist’s creative ideas come from real life, creating works of art through real life, then creating this virtual space by VR, then being accepted by the audience, and completing the works together with it. When many players play online games, the process settings of the games are designed by designers, and while designers use imagination, many
inspirations come from real life. In the process of entering the game, players need to follow the guidance of the prompt information. In the virtual world created by online games, the modeling grades of characters are classified in different ways, which makes people immersed in the pursuit of the virtual world. In the art design of digital media, the expression techniques of painting art and literature are also introduced. The images in the poem are depicted by visual images, simple composition is used to create a simple background, and subtle changes are used to increase rich details, so that the picture space can not only convey rich content but also not bring the viewer resentment and resistance caused by too much visual impact.

In the process of creation, digital media art will apply VR and AR technologies, which greatly expands the time and space of creation. From the functional point of view of creation, the application of these technologies has enriched the functions of digital media art. The single input-output mode
has been completely replaced by multiparty interaction, and
the flexibility of digital media art creation has been rapidly
improved. By feeling the development and changes of the
media, the audience will experience the aesthetic tendency
created by this digital media art for a long time, and at the
same time, it will inevitably update the aesthetic experience,
thus gradually developing a new media aesthetics and aes-
thetic orientation.

5. Conclusions

Digital media art design is a comprehensive plastic art that
introduces modern science and technology, image art, light
movement, sound movement, comprehensive large-scale
display art design, environmental plastic arts, indoor and
outdoor light environment design, etc. Digital media relies
on and praises high-tech and has strong timeliness, network-
ing, and faster speed. It is a new art form that fits the pulse of
the times, provides new forms of expression for art, greatly
expands the semantic space and ways of expression of art,
and indicates the new trend of art design. At present, the
development of VR is extremely rapid, and the support for
artistic creation of digital media is also extremely prominent.
If we can break through the previous limitations of this cre-
ative way, we can show this artistic creation in a more
diverse and full way. VR has brought a broader platform
for developing imagination and creativity for digital media
art. Art creators should strengthen technical study, master
the tools of modern digital media creation, and bring more
expressive and touching visual effects to viewers on the basis
of understanding the theory of virtual reality art creation.
VR provides a very broad space and the possibility of imagi-
nation for the shaping of three-dimensional space. Artists
should make rational use of various VR technologies from
the perspective of artistic creation theory, and through the
presentation of virtual reality, strengthen the interaction
between viewers and works of art, and increase the sense
of realism and communication, so that contemporary digital
media art can have stronger aesthetic characteristics and
value presentation under the expansion of virtual reality.

Data Availability

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

Conflicts of Interest

The authors do not have any possible conflicts of interest.

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art design based on visual features,” Boletin Tecnico/Technical
image enhancement method with light scattering


