Research on Digital Image Art Design of New Media Based on Data Driving

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Abstract: Image art is a visual art, and the key to the definition between image art and image lies in whether it has aesthetic attributes and participation in aesthetic activities. Data-driven technology makes new media programmable. In the process of digital image art design of new media, data-driven technology should be used, and through the integration and application of data-driven technology, the communication mode and way should be changed. In the process of art design, the application of new media digital image art design can make the communication scope wider and the communication speed greatly improved. Combining the differences and connections between digital images and traditional images, this paper analyzes the possibility of the development of new media art under the background of data-driven technology, and explores the application of data-driven technology in new media art, so as to clarify the thinking of new media digital image art design and lay the foundation for the healthy development of new media digital image art design. The development of new media technology not only provides more innovative platforms for the creation of digital image art, but also broadens the communication channels of information demands, thus enhancing the important functions of new media digital image art in its application field.

1. Introduction

The new media is the fourth media after newspapers, television and magazines, and it is the media of network and personal media. It is an indispensable medium that constitutes our present life. Film and television is the carrier of media information for users through the screen. Film and television can often bring better life experience to the audience through its artistic characteristics and excellent performance skills of actors [1].

Under the background of data-driven era, intelligent information technology and new media technology have developed rapidly. Digital image art, as a new artistic expression, reconstructs and reproduces people's visual perception through static or dynamic image language according to the real material world, thus giving new meaning to human spiritual world [2]. Under the background of data-driven technology, in-depth analysis and exploration of new media digital image art design can open up new development space for the development of new media art and make new media art develop better and more comprehensively.

2. Differences and Connections between Digital Images and Traditional Images

Images wrap the world around us and are "must-see things" in our daily life. Image art is a visual art, and the key to the definition between image art and image lies in whether it has aesthetic attributes and participation in aesthetic activities. Throughout the literature related to image art, researchers often regard photography as the origin of image art, although photography was only used as an auxiliary tool for painting at the beginning [3]. In the context of digital media, the meaning of media is richer than ever, and it is more suitable for artistic expression. Data-driven makes us seem to have entered a post-craftsman era, and the art created by means of mechanical reproduction, electronic technology and high-tech means emerges one after another.

The bearing medium of traditional image is a certain material, and the image itself is a visible entity. Digital image is not a visible entity in our reality, but a result of virtual reality and a real representation. Therefore, it can be said that digital images are virtual objects of physical entities. For traditional images, it includes plane visual entities such as painting, photography and printed

images. The digital image contains all the data-driven results of the above-mentioned traditional images, and the images obtained by the data-driven image acquisition equipment are computer-generated graphic images, so it gives the copied objects realistic vitality.

Data-driven consumption of images uses data-driven communication tools to obtain data-driven image information, and meets the needs of individuals or their groups through the use of these data-driven images. In this situation, the consumption mode of images has been greatly expanded, and the consumption of images is no longer only carried out through traditional media. Consumers can choose and consume image consumer goods on personal computers [4-5]. The development process of image carrier data-driven includes the data-driven of image acquisition equipment, the research and production of digital image acquisition equipment, the research and production of media carrying digital images, the development of digital image processing technology and the popularization and application of digital images. In the above process, photography has the closest relationship with it.

3. The Rise of New Media Digital Image Art Design

To a certain extent, the progress of science promotes great changes in the field of art design. In the process of historical changes, the development of data-driven technology has created a broader performance space for art. Since the new communication forms and media appeared in everyone's field of vision, the display of digital carrier has extended the form and content of visual communication design. New media digital image art design is the product of the times, showing a strong advanced [6]. It is necessary to construct the system of traditional design theory according to the form of information dissemination. According to the different development situation, the development form of new media digital image art design will be promoted.

The evolution of media is inseparable from the development of technology. Just as new media is mentioned, many times people will associate it with computer technology, data-driven technology and Internet technology. Media is a form of technology. Data-driven technology makes new media programmable. In traditional media, the way people get information is linear, and they can only read and watch according to the inherent arrangement order of the media. In the long history of the evolution and development of video art, we can salvage the commonness of different art forms in expressing video content, and this commonness is an important key for us to open the artistic treasure. With the continuous development of technology, the expression of image art is also constantly innovating.

In the process of art design, data-driven technology should be used, and through the integration and application of data-driven technology, the communication mode and way should be changed [7]. In the process of art design, the application of new media digital image art design can make the communication scope wider and the communication speed greatly improved. After the real soul is excavated, photography is not limited to the imitation of the real picture, and it is no longer a single pursuit of sharp picture expression. Soft-tone freehand brushwork photography came into being.

The visual information transmitted by images has already surpassed the abstract symbolic information such as words and occupied the mainstream of information acceptance, and the new media communication law has opened up new ways for us to organize and structure visual information, from mass communication to mass communication, from fixed one-way communication to mobile multi-communication. Different media communication laws not only affect the acceptance effect of image works, but also give birth to more image art forms through media communication and update.

4. Digital Image Art Design of New Media Based on Data-Driven

4.1 Digital Image Virtualization

Numbers are descriptions driven by current technical data, so they are true descriptions or paraphrases of real life, close to life; Virtual image is the product of the development of science and

technology to a certain stage. Virtual video art assimilates and absorbs the elements of various arts through science and technology, and changes qualitatively, making video art a comprehensive audio-visual art in time and space [8]. With the development of computer technology, more and more scientific and technological achievements have been applied to the creation of virtual image art, and the relationship between virtual image art and modern technology has become closer. Virtual image is the representative of the perfect combination of new media technology and image, and it is also the most revolutionary image communication form in recent years.

Post-secondary processing uses advanced computer technology, various post-synthesis softwares and various knowledge of design art to combine and fuse some elements, symbols or fragments recorded in more digital images, and express the expression of time and space on the psychological level that producers or artists want to express. In fact, this form is similar to the principle of montage in movies, and the winner is that this technical principle existed before the true portrayal of society from the beginning, so production and shooting can be carried out simultaneously, rather than film-like, real post-processing

This kind of "mashup" gives images a new interpretation and understanding, and is interactive with the audience, which is also one of the reasons why "mashup technology" is increasingly respected by artists. And get feedback from the audience in the combination of virtual images, which once again explains the definition of "mashup technology" in new media art.

The rapid development of contemporary science and technology is a strong backing and technical support for film development. It is driven by the development of science and technology that the film is transformed from a boring silent film to a talking film, and we can be driven by the ups and downs of notes in the cinema and wander together in the film world. In the new media era, virtualization has become the main feature of movie images [9]. Data-driven technology uses computer images and special effects to attract audiences, which increases the audio-visual effect and sensory stimulation of movies, and also plays a driving role in improving the box office.

4.2 Sensory Embedded Image

VR technology is a technical system integrating simulation technology, real-time 3D computer graphics technology, digital image processing technology, multimedia technology, man-machine interface technology, network technology and sensing technology. VR image eliminates the physical distance between the viewer and the image and creates a highly immersive experience space. Moreover, the viewer is in the time and space described by the image and becomes the witness of the image story.

VR film and television is more like photography to painting to traditional film and television, which will establish a brand-new artistic theory and a brand-new artistic language. VR images enable the viewers to move freely and divert their sight at will in the narrative scene set by the narrator, which fully embodies the independent exploration of the viewers, and makes the narrator rely more on the grammatical rhetoric of scene metaphor to mobilize and guide the viewers' viewing route. It is possible for the viewer's viewing angle to be regarded as an important narrative medium and fully involved in the narrative of video works.

The narration of VR images shows a powerful infinite approach to the real world, and creates a "real illusion" based on this approach. At the same time, some VR images have begun to try to let the audience trigger new plot events themselves, giving the audience absolute narrative rights and making it possible for the audience to completely integrate into the image. It is precisely because of this time condensed on space that VR images break the single technique of simply taking space as the place of story and narrative scene in traditional images, thus greatly enriching the expressive force of spatial narrative of VR images [10].

The emergence of VR technology has further blurred the boundary between film and games. Due to the immersion and interactivity of VR movies and TV shows, VR movies and TV shows presented from the first perspective can design more interactive links and experiences, which are more real and vivid than those in two-dimensional scenes. Although the lens language and narrative charm of traditional video art can't be replaced by VR film and television, VR film and television

has not been ideal for some stories with complex narrative and a lot of lens switching, but VR video art has actually subverted the sensory experience that traditional visual art can bring.

4.3 Man-Machine Interaction of Images

In the long history of the development of video art, video art and art design promote each other and develop together from the aspects of concept, expression and production. When images collide with culture, technology and aesthetics, digital image art has a unique charm. For the effective integration of digital image art and new media communication, many artists begin to use new technologies and new media to increase the creative expression and cultural spirit of their works. In the digital age, a series of new media technologies are developed to mobilize people's immersive sensory experience (see Figure 1).
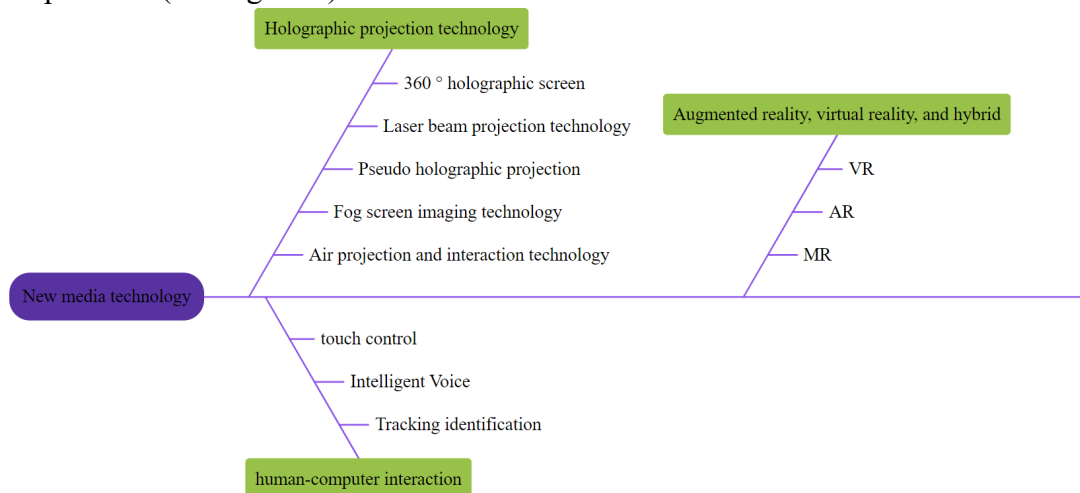

Fig.1 Application Types of New Media Technology in Digital Image Art

At present, in order to give the audience a better immersive experience, artists are constantly exploring the application changes of digital image art in new media communication, and the advent of the 5G era provides more opportunities for the application of digital image art. In the creation of digital image art, the combination of 5G with ultra-high definition production and broadcasting, virtual reality, augmented reality, mixed reality, artificial intelligence and other technologies has improved the multi-dimensional expressive force of digital images and given the audience a super interactive experience effect. Interactive communication perfectly connects the real world with the virtual world, and the application of digital image art plays a very important role in it.

For new media art, the process of human-computer interaction between works and audience must rely on tangible or intangible "interface" to achieve. When appreciating the video art, it is a series of audio-visual elements that can play a role in the audience: the audience stimulates the visual nerve through the changes of color and light and shadow; Feel the style and atmosphere created by the film space through the film's tone; Mobilize emotions through sound and music; Among them, speech recognition is an important means to realize human-computer interaction. Through the transmission, recognition and disposal of audio information, electronic signals and speech signals can be transformed in real time, which makes the "connection and interaction" feature of new media art more prominent.

Interactive technology pays attention to the interaction of data-driven technology in the field of new media art, mainly including electronic device interaction and network interaction. Although these two technologies have different characteristics, they can both promote the development of modern new media art.

5. Conclusions

Under the background of data-driven era, intelligent information technology and new media technology have developed rapidly. As a new form of artistic expression, digital image art

reconstructs and reproduces people's visual perception through static or dynamic image language according to the real material world, thus giving new meaning to human spiritual world. In the digital video art design of new media based on data-driven, virtual video art assimilates and absorbs the elements of various arts through science and technology, and changes qualitatively, making video art a comprehensive audio-visual art in time and space. The emergence of VR technology has further blurred the boundary between film and games. VR images have also begun to try to let the audience trigger new plot events themselves, giving the audience absolute narrative rights and making it possible for the audience to completely integrate into the image. In the creation of digital image art, the interactive communication mode perfectly connects the real world with the virtual world, and the application of digital image art plays a very important role in it.

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