Original Research Article

Discuss the application of AR interactive technology in digital media art

Chenxi Jin

Communication University of China, Nanjing, Jiangsu, 211172, China

Abstract: Digital media art is an interdisciplinary discipline that spans many fields such as nature, society, humanities and arts, and realizes the perfect integration of technology and art. AR (Augmented Reality) interactive technology, as the application of virtual reality technology in the field of interaction design, focuses on the optimization of the communication content and structure between two or more interactive entities, aiming to promote the synergy between them to achieve the best technical application results. Interaction design also encompasses a wide range of disciplines, and at its core, it is about creating and establishing a strong connection between people and products, and guiding the design process more precisely by predicting the impact of product use on user relationships. The combination of AR interactive technology and digital media art can not only profoundly show the connotation and value of art, but also significantly improve the artistry of design products, optimize the user's experience, and give full play to the advantages of technology more effectively. This paper explores the application of AR interactive technology in digital media art, aiming to provide the latest technical support for the field of art and design, and then improve the overall design level.

Keywords: AR interactive technology; Digital Media Arts; Apply

1. Introduction

Under the AR interaction technology, an immersive interactive display application of virtual and real integration can be built to provide users with immersive and interactive experience scenes, so that users can start a new immersive experience of virtual and real integration in real scenes by using mobile phones, tablets, AR glasses and other devices. Relying on the virtual interactive guidance, visitors can clearly and intuitively view the features and advantages of the displayed products and equipment, flexibly deploy and update the scene content, and better meet the personalized needs of users. Under the development of this technology, it provides a creative impetus for the development of digital media art, and the integration of the two can enrich the art form, enhance the user's sense of experience, realize the deep integration of technology and art, achieve the best effect, and better display the connotation and value of art.

2. Overview of AR interactive technology and digital media art

(1) Overview of AR interaction technology

AR interaction technology simply refers to the combination of human-computer interaction technology and augmented reality technology, which refers to the construction of a virtual environment under the joint application of computer equipment and various interactive technologies, so that users can experience and feel in the virtual environment, so that users can feel the wonder and richness of the virtual world in the immersive environment, enhance the audience's sense of experience, and allow the audience to get close and natural contact. Under the application of science and technology, various information in the virtual world and the real world can be perfectly combined to enrich the user's visual, auditory and tactile experience. Augmented reality technology is a synthesis of optical perspective and video perspective. In addition, AR interaction design mainly focuses on solving user needs, focusing on the logic and rational thinking of design, and there are commonalities between it and digital media art.

(2) Overview of digital media arts

The forms of expression of digital media art include digital painting, 3D modeling and sculpture, animation (2D animation, 3D animation and stop motion animation), interactive art, game design, multimedia installation, digital photography, music and sound art, network art and other fields of art, which have the characteristics of comprehensive and systematic. As a new force in the field of contemporary art, it has attracted the attention of many artists and audiences with its unique charm and unlimited creativity. It can rely on digital technology to create, including computer graphics technology, network technology, multimedia technology, etc., and perfectly integrate traditional art forms with modern technology. Digital media art is characterized by its high degree of interactivity, editability, and efficient communication. It not only breaks the limitations of traditional art in time and space, but also allows the audience to participate in the artwork in a new way and experience the unprecedented artistic feeling. The crossover of digital media art focuses more on visual perception and interactive experience^[1].

3. The application of AR interactive technology in digital media art

(1) Clarify application requirements

In order to give full play to the advantages of AR interactive technology and promote the development of digital media art, it is necessary to grasp the relationship between technology and art, ensure that the two are integrated and develop together, better meet the requirements of the times, and solve the problems in the development of digital media art. To inject vitality into artistic creation, improve the quality of art, and enhance the sense of science and technology of artworks, the specific requirements are reflected in the following two aspects: first, through the application of technology, digital media information can be collected, analyzed, integrated, and transmitted in real time, providing users with space and places for human-computer interaction, ensuring that users can deeply appreciate works of art, immerse themselves in the artistic environment, improve their own appreciation level, and realize the close combination of art and technology. For example, when watching 4D films, users can feel immersively, integrate into the characters, immerse themselves in it, feel the charm of digital art, and at the same time, enjoy the charm of the film under AR interactive technology, and improve the depth of viewing. Second, meet the personalized experience needs of users. Under the application of AR interactive technology, a multi-dimensional space can be created to display a new virtual world, so that users can enter the space and imagine freely, feel the identity and status of different characters, and let users have a new experience and feelings. And change the user's cognitive concept, reshape various roles, play the main role of the user, and meet the user's personalized needs.

(2) Application in stage performances

Stage art is a very important part of digital media art, and the core of stage art is performance, which requires actors to use various technical means to improve the authenticity and vividness of the performance, and enhance the appeal of the performance. In order to achieve this goal, AR interactive technology can be used to innovate performance methods to bring a new viewing experience to the audience, enhance the sense of power, science and technology and art of the stage, deepen the impression of the audience, and achieve a fascinating effect. For example, AR interactive technology can be applied to stage professional competitions, and live broadcasts can provide the audience with an all-round and panoramic viewing experience, so that the

audience can feel different competition situations and enhance the audience's sense of experience. For example, AR interactive technology can also be applied to the game industry to improve the authenticity of the game, and virtual characters can be combined with real scenes, and virtual characters can be played by real people, so that the audience can be immersed in it, feel the magical changes in the game world, meet the personalized needs of players, and promote the development of the game industry^[2].

(3) Application in the film and television industry

The development of digital media art has also promoted the development of the film and television industry, making the traditional film and television industry also transform to digital film and television. Under the application of AR interactive technology, it has injected fresh blood into the development of the film and television industry, which can create a new audio-visual feast for the audience, and through the combination of the virtual world and the real world, the audience can be immersed in it, feel the richness of film and television works, and have a new viewing experience. At the same time, the application of AR interactive technology can provide opportunities for the innovation and development of the film and television industry, stimulate its potential and motivation, solve technical problems, and realize the close combination of vision, hearing and touch when shooting works, meet the dynamic viewing needs of the audience, and promote the modern development of the industry.

(4) Innovate digital art forms

First, change the way you think about creating works of art. AR interactive technology can transform human imagination, various creativity, and imagination into reality, and can combine virtual and reality under deep processing and multiple combinations, so as to better complete artistic creation and solve creative problems. For example, with the assistance of three-dimensional images and three-dimensional models, three-dimensional and interactive images can be generated, which can change creative ideas, broaden creative space, and promote the innovation and development of art.

Freedom of design. Under the application of AR interactive technology, the designer's creative ideas and blueprints can be fully displayed, which can stimulate the designer's creative enthusiasm and initiative, enhance self-confidence, stimulate their potential, and design unique works. For example, AR interactive technology can be applied to architectural engineering design, and designers can adjust the height, appearance, color and other elements of the building in real time through the AR interactive interface, and recombine them according to user needs and environmental changes to ensure that the design scheme meets user expectations and improves the design effect. In addition, AR interaction technology can also be applied to the simulation of construction sites, allowing users to visit and experience, meet user needs, and allow users to participate in the design, improving the pertinence and effectiveness of the design^[3].

4. Conclusion

In the context of the new era, digital media art is flourishing in the direction of diversification and modernization. Driven by this trend, the application of AR interactive technology has injected new vitality into digital media art, promoted the progress of stage performances, film and television industries and other fields, and provided users with a rich and diverse service experience. In order to give full play to the advantages of AR interactive technology, workers need to clarify the purpose and requirements of the application, take the user's personalized needs as the core, and enhance the creativity of art through technical means, enrich the expression of art, so as to create high-quality works of art.

References

- [1] Dou Ximin. Application of digital media art design in urban cultural and creative industries[J]. Tomorrow Fashion, 2024(16).
- [2] Zheng Yue, Liu Junhui. Footwear Technology and Design, 2024, 4(13):109-111.
- [3] Zuo Deyao, Gao Long. Practice and exploration of VR/AR technology in digital media art courses[J]. Science and Technology and Innovation, 2024(15):147-149.)