

Applied Research on Cinema 4d Production of Holographic Projection Art

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Abstract: Holographic projection art, as the most advanced comprehensive digital media art, still occupies a high level of research position in the field of digital technology and CG art, whether in domestic or international art research. The aim of this paper is to explore the scientific application of CINEMA 4D three-dimensional visual effects in the production of holographic projection works. It is hoped that this research can achieve breakthrough progress in the field of holographic projection image art, especially in the aspect of visual representation, Because this art form is the most unique cutting-edge technology in digital art, the interdisciplinary and cross-domain application of art science is the epitome of modern CG art, and has a wide range of applications. And has very good exploitable and researchable. Further research in this field is of great practical significance, especially in holographic projection and the innovation and development of scientific research in the field of related ACG art. This paper can play a role as a theoretical cornerstone.

1. Introduction

Based on the application of CINEMA 4D 3D image design and production software in interactive holographic projection art, the main research goal of this paper is to explore the expressive method of 3D art. Research object: interactive holographic projection art. Content: CINEMA 4D the visual expression method and technical means of 3D visual image in holographic projection art. On the whole, based on the rapid development of CG technology, holographic projection, a new star digital art field with both art and technology, is of great research value and academic theory, so the related digital art is developing rapidly. And there are many different forms of 3 D technology and 3 D visual image art, as well as related art forms. The ultimate goal of this paper is to analyze and study the outstanding forms D visual images made by CINEMA 4D in holographic projection art, and to promote the innovation of the aesthetic sense and visual expression of holographic projection art. And it can also explore the new ideas of holographic technology in the future.

2. Technical Briefing

Holographic projection art, also known as holographic phantom art, is an important comprehensive art expression form in which the development of contemporary digital art is

gradually moving towards digital technology as the medium and scientific and artistic creative thinking as the carrier. As a result of the rapid development and research progress of laser beam and holographic projection technology in the United States, Japan and South Korea, the development of laser beam and holographic projection technology is gradually improving to a more perfect and interactive dynamic level, especially in the application of multi-channel fusion, The application of CINEMA 4D 3D film and television animation software developed by German MAXON based on Python language in 3 D of image art works has made the interdisciplinary field of media art better developed and applied. At the same time, the application and promotion of foreign universities have achieved many good cases in international art applications.

According to the development stage, scientific research name, R & D personnel, research time, application of the project research history and technology development as follows:

3. 'S Early Exploration Stage: Pepper's Vision (Pepper's Ghost) British John Pepper 16-19th Century Originated from Italy and Used in Stage Magic Performance;

2. The early stage of 2. development: holographic projection (accidental discovery by the British BTH Company in the study of enhanced electron microscope performance) was discovered in 1947 by British Hungarian physicist Dennis Geber and patented on 1947.12 Awarded the 1971 Nobel Prize in Physics;

3. formation and development stage :①laser projection produces the optical holographic projection photograph of the Soviet scientist Yuri Danisouk 1962 3D object (Danisouk effect);② Transmittance Holographic Projection Emmett Lys and Uris Upatnix 1962 Radar Laboratory, University of Michigan; ③ Laser Holographic Projection Japan Science and Technology Corporation 1999 laser beam projection image holographic projection virtual etiquette guide table and other production applications; ④ 360° Holographic Projection Institute of Innovation and Technology, University of Southern California The Glass Pyramid (45° Glass Imaging) Museum Virtual Heritage Cabinet and other applications ;⑤Air Projection MIT graduate student Chad Dyne 29 years old 2005 Air ionization, laser imaging technology, medical surgery holographic projection simulation image production applications;

4. Integrated Technology Application Stage: Virtual Idol, Stage Performance, Arts and Expo Exhibition yo, Crypton Future Media, INC/SEGA/5Pb/TOKYO MX of Japanese Musicians Interference and diffraction of light from 2010 to present, refraction cross-media interactive applications, such as the first sound future concert, the opening ceremony of the 2018 Rio Olympic Games in Brazil, the creation and application of works such as the Museum of Magic.

4. Art Application

The applied research in the field of interactive holographic projection art has been in the low end of our country, so this project has strong academic theoretical guiding significance and technical development guiding significance. At the same time, this paper also provides some innovative basis of art theory to designers applying this art form in practice. Concrete academic, mainly reflected in this project is based on the Pepper illusion of visual theory and the use of Gestalt psychology analysis, but also to explore its technical factors, Through the analysis of the practical cases of the commercial application of new media art 3 D dynamic Gestalt with the goal of enhancing customer adhesion, this paper analyzes the causes of different aesthetic directions and technical elements brought to the audience from multi-angle perspective.

Application value of making interactive holographic projection art by Cinema4D is mainly in the field of art expansion, and the main method of this interactive scientific and technological means is

in teaching work. This interactive scientific and technological means can be applied to teaching work, such as holographic courseware. Teachers can wave in the air to show 3 animated films to explain the engine assembly principle of internal combustion engine. Vivid display is like Tony Stark in making Iron Man; For example, interactive advertising can be well applied to ground projection or wall projection. This application can be combined with somatosensory technology and mechanical matrix technology according to the transformation of personnel into different color figures with various special effects and mechanical wall elevation relationship changes a variety of different pictures and advertising content, can also be used as multimedia stage background wall; It can also be applied to the exhibition, the holographic glass in the museum will see the video information of the cultural relics when you pass by, and the exhibits themselves will talk to you, such as the paintings in the Harry Potter film. Each painting can tell you the story that happened to it, and the interpretation is vivid. In the domestic and foreign application scope can be said to be very extensive has the very good development prospect. The application of holographic projection technology in the stage can not only produce three-dimensional aerial illusion, but also make the illusion interact with the performer, complete the performance together, and produce a shocking performance effect. From the use T holographic projection technology in the fashion release show, the beautiful holographic projection picture accompanied by the model's walk brought the audience to another world, as if to make the audience experience a virtual and real dual world. The more important holographic projection is of great application and practical value to the teaching of digital media and the application of the second classroom, especially in the scientific research of 3D film and television animation. By applying Cinema4D animation technology to the development and application of this field, it not only enhances the aesthetic sense of vision, but also contributes to the research and development of teaching and research reform in the core curriculum of Cinema4D, while holographic imaging technology can greatly promote the application and display of visual information materials, It is also very intuitive and interesting to learn, especially in the application and performance of interactive holographic projection, which is more helpful to Chinese students' enthusiasm for learning, and can also enhance the practicality of practical training courses and the constructive of related multimedia studios.

5. Principal Problem

From the above materials, we can see that the international scientific research and application of CINEMA 4D and holographic projection digital art and other related arts and science and technology in this field is in a relatively high-end frontier development stage, however, The research and application of domestic colleges and universities, especially higher vocational colleges, are almost at zero starting level. Its development conditions and artistic level in the field of scientific research are mainly due to the following aspects:

The first is that the theory of teaching and scientific research in colleges and universities can not be transformed into the application demand and technical quality of domestic CG art in the introduction of foreign commercial technology practice; the second is that only too much research and introduction of new technology in the production of holographic projection video effect in artistic thinking; the third is the role of the CINEMA 4D 3D visual effect technology in the creation of holographic projection art or the application of traditional art aesthetic principles without the visual and artistic expression of modern and post-modern interactive art; The fourth problem is that too many related art talents enter the industry late, and the local talents can have a low level of business when they practice art and technology in related fields after studying in colleges and universities. The fifth reason is that the development and application of software and hardware are still in the stage of basic application and can not be upgraded independently.

6. Main Solutions in Practice

Therefore, as far as the above outstanding problems and scientific research difficulties are concerned, For this interdisciplinary and cross-domain art and science and technology fusion of the new star art expression in the practice and application of scientific research in colleges and universities in China should pay more attention to the following practical application and exploration of the main points:

5.1As far as artistic thinking is concerned, the production of video effects of holographic projection should be based on the study of the changes of visual symbols and visual forms combined with modern and post-modern, rather than insisting on the planning and design of this novel CG art form by using the simple concept of film and television animation, especially in the development of scientific research products of interactive holographic projection art design. It is necessary to emphasize the integration of Pop art idea, deconstruction art idea, virtual reality art idea and so on, As a result, it can better guide the application of educational research in the conceptual design of holographic projection art based on CINEMA 4D three-dimensional visual effects;

5.2That is, colleges and universities should introduce more relevant talents into ACG related industries as soon as possible when cultivating corresponding art and technical talents. In particular, the technology of digital image technology and art in 3 D art concept and holographic projection is combined with the principle knowledge of multi-channel fusion three-dimensional technology, so as to better reserve talents;

5.3In view of the problems related to the development and research of computer science and technology, such as the design and application of holographic digital technology hardware and 3D software, it can still be realized by purchasing or renting in China;

5.4That is, at the same time, colleges and universities should train the most commonly used professional talents in the international CG industry R&D(science and technology artists), based on the curriculum system of graphic principles, And at the same time to assist in the construction of training base to develop a certain research spirit of programming software plug-in or prefabricated library application script expression for technical personnel;

5.5Finally, the most important thing is to build CINEMA 4D relevant holographic vision laboratory and introduce advanced development art talents at home and abroad as the development strategy of standing young talents, so as to realize the basic public relations research team. The overall direction of scientific research development is to combine technical exploration with talent reserve.

7. Conclusion

For the future development, I think that in general, such as full projection art, such as the comprehensive CG digital art system of cross-domain, cross-media art, I think it is highly researchable and exploitable. The future development direction is aimed at the research of scientific research technology and art of digital art in colleges and universities. I think we should take the research of three-dimensional visual effect CINEMA 4D holographic projection art creation as a reference, we should adopt multi-angle and multi-disciplinary communication and co-construction activities to deepen the reform, we should implement the multi-disciplinary comprehensive talent intervention development model with mixed lap and fusion, adhere to the modern and post-modern art theory as the ideological and theoretical support point of artistic creation, and pay close attention to the application of CG technology in holographic projection, VR,AR and other interactive media art; The most important thing is to train and introduce scientific and technological talents in colleges and universities as the main starting point and supporting point in the field of digital art

scientific research. Talent strategy is the fundamental and future development foothold of scientific research in colleges and universities. Finally, I believe that in the future, the scientific research, development and application of Chinese colleges and universities in the field of digital art, especially holographic projection art, will go further and occupy the frontier position in the field of international ACG art. Lead the new wave of digital art era.

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