

The Application and Development Prospects of Virtual Reality Technology in the Field of Film and Television

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Keywords: Film and television field; Virtual reality; Development prospect

Abstract: The development of science and technology has brought great impetus to society, and it has also brought more fun and convenience to people's lives. With the current development of science and technology, virtual reality technology has entered people's field of vision and has gradually become familiar to everyone. Applied to other fields, it can bring a variety of new experiences to users. Virtual reality technology is abbreviated as VR, which is a very cutting-edge technology research field knowledge and an inevitable result of the computer age. Virtual technology not only brings people a wealth of film and television programs, but also brings great convenience to the working methods of film and television technicians; with the continuous application of virtual reality in film and television, the miracle it will bring to the audience in the visual field will become more and more. More and more. This article will analyze the concept, characteristics, application of VR technology in film and television production and its future development prospects. Help people learn more about this field.

1. Introduction

The development of science and technology has brought great convenience and spiritual satisfaction to people. Similarly, the film and television field is also trying to bring greater visual and spiritual enjoyment to the audience under the promotion of science and technology [1]. Follow the trend of the times, constantly promote technological change, and virtual reality technology is also applied [2]. Virtual reality technology, referred to as VR for short, is a very cutting-edge knowledge in the field of technical research and an inevitable result of the computer age. Moreover, virtual reality technology, through computer processing, can transform the popular plane environment into dynamic pictures and images that people can feel, making people have a real-time and realistic feeling [3]. At present, virtual reality technology has gone through four stages and shows vigorous vitality. Moreover, virtual reality technology includes many disciplines and technical aspects such as computer graphics, artificial intelligence and sensing technology, which can fully simulate people's multiple senses [4]. It enables people to interact with them through vision, touch, hearing and other senses, so that computer technology provides people with more and faster information services, realizes the close interaction between people and computer simulation environment, and creates a multi-dimensional information space for people [5].

Film and television production is the integration of technology and art. Its basic technology includes audio production, image processing, post synthesis, etc. at the same time, it is also an audio-visual language art [6]. The field of film and television has always been at the forefront of the times, especially the darling of emerging technology and fashion. Then, virtual reality technology should also have its own place in this field. It expands the previous film and television vision, so that people can get rid of the previous flat and monotonous interface feeling and focus on a three-dimensional sensory stimulation, The plane part of the screen seen by the eyes is transformed into a deeper and more advanced three-dimensional space through technology [7].

2. Overview of virtual reality technology

In 1973, American computer artist Myron W. Krueger first put forward the term virtual reality technology, which is also the earliest concept of virtual reality. In a narrow sense, virtual reality is a

technology combined with other related science and technology on the basis of modern computer technology. It mainly refers to the data exchange between computer and sensing auxiliary equipment such as stereo glasses and sensing gloves, so that people can get the corresponding visual, auditory, tactile and even olfactory information, so as to establish an artificial environment of three-dimensional information and produce a realistic three-dimensional reality feeling [8]. At present, many people of insight in China are actively paying attention to this research. As a fashion leader, the film and television industry is also actively paying attention to the dynamic development of virtual reality. Its invention has brought great changes to the traditional film and television technology.

Virtual reality, as its name suggests, is to create a real atmosphere in a virtual way. In the final analysis, it is a simulation of reality. It forms a comprehensive experience with the help of panoramic camera shooting, seamless image stitching, three-dimensional graphics generation, multi-sensor interaction and even artificial intelligence; It creates an interactive virtual environment close to reality, allowing viewers to observe around with a viewpoint as the axis. At present, the technology has been developed to integrate the objects created by a variety of software into one, and finally realize human-computer interaction and achieve multiple purposes such as entertainment, manipulation, work and social networking [9]. In this environment, the audience can greatly and multi dimensionally stimulate vision, hearing, touch and balance, and experience an almost immersive feeling. VR technology integrates four characteristics: multi perception, immersion, conceptualization and interactive function. Multi perception is manifested in that the technology uses the simultaneous triggering of users' vision, hearing, touch, smell and sense of balance to create a virtual environment close to reality; Immersion is the result of high-precision and multi perception, which is expressed as the user's complete integration experience; Conceptuality is manifested in that people can construct a user-defined environment according to their different needs; The interactive function further realizes the data feedback between the user and the virtual environment; These characteristics are enough to rewrite the development process of film in the future.

3. Development trend

Virtual Reality technology is referred to as "VR" for short, which is the abbreviation of "Virtual Reality". It refers to the generation of three-dimensional virtual world by computer equipment simulation, which can help users feel immersive and provide sensory simulation such as vision, hearing and touch for users. Since 2014, in the field of film and television, virtual reality technology has become a new round of discussion and practice object [10]. Most VR users welcome all kinds of movies very much, so many large IPs in the film industry want to join hands with virtual reality technology. Now it is very common for many movies to be produced in 3D, 4D or even 5D. However, for the next application of virtual reality technology, how to improve the interaction of the audience, reduce restrictions, and turn the viewing content from simple clips into vivid reproduction scenes still needs further efforts. VR is not only in film and television, but also covers a wide range of fields, including roaming, virtual model room, multi-disciplinary coordination, medical treatment, venue simulation, education, sensing technology, military, realistic technology, entertainment and games and many other fields.

At present, from the field of film and television, virtual reality technology has a promising development, involving a wide range of fields, which can bring a brand-new viewing experience to viewers, and has a better development and application prospect. At the same time, however, it will also encounter big challenges, such as the high price of equipment is an unavoidable hard condition. Apart from objective factors, the film can't be shot professionally and accurately without the assistance of professional virtual technical operation instructors. In addition, even if there are excellent works born, there will still be situations where the audience won't buy them, because when the audience is sometimes influenced by the plot or other factors and misses the presentation of virtual technology, they will feel that VR is not good either. This cognition has brought great obstacles to the promotion of virtual technology. For the film and television field, the challenge is

the opportunity, and it is an important task of the present era to seize the opportunity to make the virtual reality technology achieve proud results.

In the future, VR will inevitably bring a new experience to the audience. Besides the film and television field, VR will also be applied to all aspects of life, bringing new development and breakthrough to all fields. However, apart from its advantages, virtual reality technology also faces enormous challenges. From the field of film and television, it can be seen that people can't fully experience the benefits of virtual reality due to the limitations of various technologies, and VR equipment has not been fully popularized. At present, optimizing virtual reality technology is still the next step to be done. I believe that in the future, human beings will be able to transcend the real world, build a richer and more efficient spiritual world, and turn them into a bright part of human civilization.

4. Application of virtual reality technology in film and television

Time and space are two important dimensions for human beings to perceive and grasp the world. In the field of film and television, as a virtual space opposite to the real world, it is a space that synchronously maps the real world and a space that confuses the real with the false with the help of virtual reality technology. People who live in it then get the ability to surpass the constraints of the real world. Therefore, virtual reality technology can be widely used in the field of film and television. Virtual reality technology is closely related to film. In 1962, Morton Heiling, a famous Hollywood photographer, developed a three-dimensional film. This film has a variety of sensing devices and stereo functions. Like the 3D and 4D films we see now, the seat can automatically swing or vibrate with the film plot, and the smell and wind can also exert effects on the audience at the same time. Therefore, The audience can really feel the sensory stimulation in the film. Figure 1 shows the 3D modeling process of movie characters.

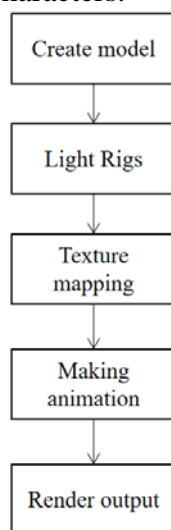


Figure 1 3D modeling process of movie characters

Under normal circumstances, the task of film and television works requires real actors to perform, but in the process of shooting, real actors need to be paid a large amount of remuneration, and when shooting in some situations with high risk factors, it is easy to cause actors to be injured or even bring huge loss. In the field of film and television, the use of virtual reality technology, through the simulation of people, not only improves the safety factor, but also enables the shooting, through the virtual actors, to fully follow the wishes of the guide. But at present, this technology is more difficult. In the use of virtual actors, virtual reality technology still cannot be 100% consistent with real people. Still need further development, need to further overcome the problems of looks, manners, manners and other aspects.

Film and television art is a comprehensive art complex that combines space and time art. It can not only expand flat or three-dimensional images on the screen space like space art, so that the work

can obtain multi-dimensional and multi-modal expressive power, but also The picture continues in the time dimension, forming a complete picture and effect. Traditional film and television creation requires staff to record in actual scenes and requires expensive equipment. The whole process is cumbersome, and detailed editing is required in the later stage, which requires a lot of investment. Virtual reality technology is more realistic in scene production and has more diverse creative methods. It not only solves these problems well, but also fully stimulates the imagination of the staff, increases the rate of film and television creation work, and encourages them to transform imagination into The platform in film and television creation. Virtual studio technology is also a kind of virtual scene, but it is produced by the combination of 3D technology and real-time video. It is a new type of film and television production technology. Its advantage is that the virtual scene can be switched at will, which greatly improves the work efficiency of film and television production. The use of defocusing, high-definition video processing technology and other technologies can also promote the development of virtual studio technology.

5. Conclusions

The wide application of virtual reality technology in modern film and television, such as virtual studio technology and simulation of roles, has promoted the continuous development of the film and television industry in new areas. We believe that in the near future, the continuous innovation and reform of virtual reality technology will bring a richer sensory experience to the audience and lead the creation of film and television into a new era. In the future, virtual reality technology may become the next entertainment medium, which can freely enter and participate in various film and television works, come and go in various places, and can replace the existing media expression without resorting to any other complex technologies. Therefore, it is necessary to strengthen the control of the subsequent integration of virtual reality technology and film and television works, focus on positive experiences, and avoid negative, negative, pessimistic, and world-weary emotions to audiences and players. The concept, development history, application of virtual reality technology in the field of film and television explained throughout this article. The future development trend includes the analysis of the two sides of development. It is not difficult to see that although this technology has gone through such a long development stage, it is still today. It is not perfect and mature, and even a lot of obstacles have appeared. The most urgent task is to overcome all difficulties and obstacles and discuss the development of virtual reality technology, covering various industries of the technology. Then, we should all believe that we will look forward to it in the near future. The flying over the wall, the travel of the universe will become a reality through advanced technical means.

Acknowledgements

Fund Item: General Project of National Natural Science Foundation of China: Research on mechanism and Mode of Multi-format Joint Development of Digital Creative Products (71874142)

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