

## Analysis on Development Path of 3D Animation Technology Based on New Media Context

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**Keywords:** New Media; Three-dimensional Animation; Film and Television Special Effects

**Abstract:** Nowadays, new media is popular, especially in the animation industry. The current teaching method is no longer suitable for today's development situation, so it has been unable to train higher-level animation industry talents. With the continuous development of information technology, film and television, three-dimensional animation has come into the public's attention, and special effects art has been introduced into it, which has facilitated the audio-visual feast of three-dimensional animation. Although three-dimensional animation has developed quite well now, it is still not so simple in the production of animation design. Technology is the foundation of animation, and animation is the embodiment of technology. In the post-production of 3D animation, a major problem in animation technology is how to combine 3D animation technology with film and television special effects. Under the wave of new media development, the technological development of mobile networks and mobile terminals has played an unprecedented role in the development of animation-related industries.

### 1. Introduction

Animation is a comprehensive art, which covers a variety of forms, such as film, music, art and so on. Nowadays, new media is popular, especially in the animation industry [1]. The current teaching method is no longer suitable for today's development situation, has been unable to train higher-level animation industry talents. In the classroom teaching of action painting, we should focus on real-time rendering of three-dimensional animation teaching [2]. The contradiction between the animation teaching and the three-dimensional animation industry is gradually resolved. The depth of use of new media technology has also changed from the original development of simple technology to the emergence of today's major film and television special effects outsourcing companies and even people's commonly used mobile phones [3]. With the continuous development of information technology, 3D animation of film and television has entered the public eye, and the introduction of special effects art has promoted the audio-visual feast of 3D animation [4]. Designers began to use computer 3D technology for animation design, and the animation form was also transformed from the original 2D hand-drawn form to 3D animation [5]. Computers have become a new tool for animators, and they have got rid of the complex and cumbersome work of traditional animation.

The ever-changing development of new media technologies has also directly affected the thinking transformation of film and television creators and the changes in the industry, making the boundaries between film and animation more and more blurred [6]. Although 3D animation has now developed quite well, it is still not so simple in the production of animation design [7]. In the late stage of 3D animation of film and television, one of the major problems of animation technology is how to combine 3D animation technology and film and television special effects. Since the birth of automatic painting and film, its development history is actually the development history of science and technology. Technology is the basis of animation, and animation is the embodiment of technology. So that designers will devote more energy to the creative work of animation itself, which is very beneficial to the development of animation. Under the background of new media, all walks of life are innovating all the time. People's material life is more abundant, but also pay more attention to the improvement of the spiritual world. With the development of new media, the technology development of mobile network and mobile terminal has played an

unprecedented role in promoting the development of animation-related industries.

## 2. The Impact of New Media Technology on Film and Television Creation

Since the birth of new media technology, it has been growing at an alarming rate, and this phenomenon has directly changed the thinking and mode of film and television production. In three-dimensional animation, special effects technology has brought great audio-visual experience, and the most expressive is light and shadow effects. For animation synthesizers, it can control the transformation of light and shadow, and then control the whole scene. Before the birth of new media technology, the earlier film and television propaganda relied more on the active information exchange between people. The emergence of new media technology has a positive impact on the field of film and television propaganda. The cost of working hours is greatly reduced, and the channels of information dissemination are more diversified. In the traditional 3D animation software teaching process, teachers generally use multimedia to explain or actually demonstrate the prepared cases for teaching. People know that a movie may be information obtained through a friend's chat, or seen in traditional paper media. This directly led to the extension of the film and television publicity cycle. The animation industry is huge and can be divided into many categories, and there are many forms for sorting by technology.

The emergence of new media has also expanded the platform for film and television production, reducing the requirements of producer participants. This has led to a dramatic shift in film and television, an industry that used to cost a lot of money and has high professional requirements for producers. Under the influence of new media, the field of film and television production has undergone earth-shaking changes, and new media technologies have developed rapidly with the emergence of new media. For the 3D space effect, it integrates the character design into the process of designing the scene, achieving a good combination of the two. Special effects light and shadow have unique charm, it can fully express the characters, not only can express their inner feelings, but also can foil the scene. Completion of the whole film and television animation needs to be divided into three parts: the production of original characters in the early stage, the binding of intermediate animation and the synthesis of special effects animation in the late stage. Each part is interrelated and interactive. In order to adapt to the advantages of current real-time calculus animation, it is necessary to rebuild the team and build a rigorous process system. The latest special effects technology can be a very good scene and characters, the role can move arbitrarily, can also change the action at will, to achieve a more realistic performance effect, showing the three-dimensional animation picture.

Data repairing can remove noise points and smooth trajectory by the post-processing function of the software in the acquisition equipment. According to the animation curve, the errors and omissions in the action are corrected one by one, and the fluency and accuracy of the action are guaranteed. Geometric modeling was first developed in motion capture technology. The path relationship number, the overall network density and the central potential are analyzed. As shown in Table 1.

Table 1 Motion capture modeling structure analysis

The internet	Number of nodes	Number of relationships	Central potential
Meeting information	1245	2134	0.597
Interactive information	1396	2468	0.645
Weighted summation	542	3159	0.7631

The traditional film and television in the concept of people is based on the big production and star system. The three-dimensional animation of film and television has been continuously improved with the development of science and technology, and its expression has become more and more complicated, especially in post-production, which requires a lot of effort. Only need to provide animation files and texture materials to the playback device, and the playback device can

complete the communication interface. Handling control information from various input devices and exchange of information between different hosts and networks. With the extension of computer in the field of film and television and the increase of various production software. Digital three-dimensional special effect image technology has gradually broken the limitations of previous film and television animation design, and made up for the shortcomings of the original animation in visual effect. Three-dimensional animation is the art of expression. It tells a moving story through audio-visual language to show the emotions of the characters to infect the viewers. Video websites and other online media no longer use movies and TV dramas as the main source of broadcasting, while offline viewers can communicate their ideas with other audiences through text in a timely manner through the form of bullet curtain.

### 3. The Combination of Film and Television 3D Animation and Special Effect Art

Engine occupies the most important position in timely calculating animation. Different engine scale and mode will lead to different picture quality and animation style. In line with the requirements of new media for the form of three-dimensional animation, three-dimensional animation is required to be completed quickly. The requirements for complex light and shadow, ion effect and advanced material are relatively low. In the past film and television animation, the processing of light and shadow is relatively simple. Only according to the light and shadow shown in the original animation, light changes are processed. To some extent, this light and shadow processing technology can not better reflect the character. The special effects of three-dimensional animation need to be perfectly combined with the actual original three-dimensional animation. In the production of special effects, the original painting and props should be strictly corresponded to ensure the computer simulation effect and the authenticity of the shot picture. Special effects art adds luster to the production of film and television dramas and gives a strong impact on the visual. The use of special effects art can make the scene more beautiful, while at the same time simulating the fact that there is no scene in life. For some large-scale online games, it takes a lot of money to build the engine, and after years of unremitting efforts to develop and upgrade.

Through constant playback and capture, the changing position of the performer's body in space is achieved. It is even possible to record the facial expressions of the performers. In motion capture and actor animation, the actor's bone structure is usually represented as a skeleton chain of multiple bones. As the social relationship of nodes increases, the shortest path between nodes and the average distance of the entire network are decreasing, as shown in Figure 1.

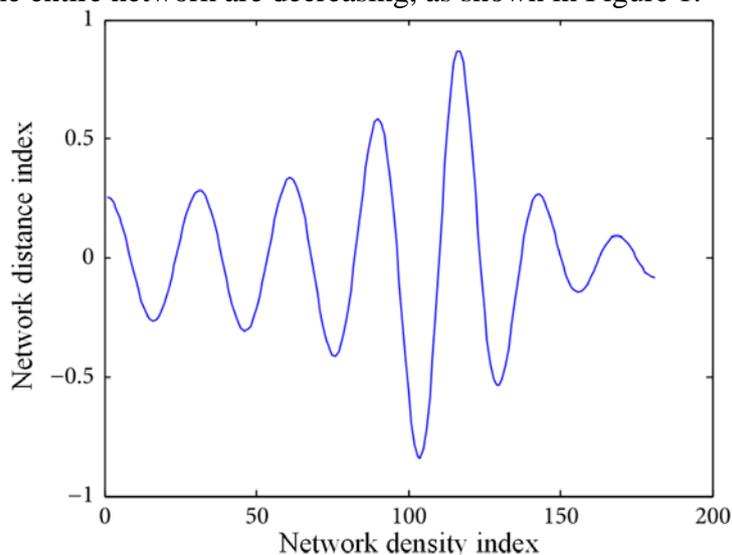


Fig. 1 Mobile network node distance analysis

Special effects art can bring different effects to film and television animation, it can very good performance. For traditional animation, it is impossible to do both at the same time. When designing a character, the designer cannot balance the scene design. They are independent

individuals. The 3D animation of film and television is based on computer digital technology as the core, and simulates reality through the powerful computing power of computers. China's film and television industry has developed rapidly, and the use of three-dimensional animation technology has cast a mysterious color on film and television production, especially the integration of special effects art to achieve good performance. With the help of 3D light and shadow special effects, the relevant parameters of virtual light are controlled to further promote the interaction between light and shadow. Then all light and shadow time frame maps are used to realize the superposition of their layers. At the same time, the brightness is adjusted to make the scene extremely expressive and achieve special effects of light and shadow. The special effect art also provides infinite imagination space for the creator, and the thought of the creator of the three-dimensional animation is also freed from the bondage of pure technology.

Through digital special effects technology, Animators can create scenes that were not originally available, can create gorgeous scenes, and can better infect the hearts of the audience. Designers have established a brand-new three-dimensional animation language paradigm and style through 3D Particle Effects, fluid effects and other late synthetic effects. Real-time rendering animation has a different architecture from Computer Graphics, so he has a different data storage from Computer Graphics. The data of the previous Computer Graphics were basically generated by compressing the sequence frames of the images in a specific format. When creating a 3D animation project, you need to complete the script, character setting, modeling, material, animation, and synthesis. The production process of 3D software is the technical realization means of animation design. However, in a three-dimensional film and television animation work, only this simple technology is not enough. Under the premise of understanding the basic operation and production process of 3D software, we will carry out targeted teaching according to different division of labor, and give full play to students' superiority and teamwork spirit.

#### **4. Conclusion**

With the rapid development of computer technology, it has greatly promoted the production of 3D animation in film and television. Three-dimensional film and television animation has entered people's lives, and its development speed is very fast, it is no exaggeration to say that the next few years will be the era of three-dimensional film and television animation. 3D animation teaching can make real-time calculus animation an important breakthrough in new media teaching, and it has a strong transformational force. While teaching the relevant programming language, the other side needs to reform the original animation teaching content. The development of new media has provided a new stage for the animation industry, and also put forward new requirements. Film and television, which is reputed as a synonym of dreams, is no longer a shallow attempt at the special effects art in three-dimensional animation technology. The integration of special effect art into movie and TV three-dimensional animation production is a technological progress. This article focuses on the application of special effect art in movie and TV three-dimensional animation, hoping to improve the level of movie and TV three-dimensional animation production in China. In practice, we will continue to explore and strive to build a more scientific and reasonable teaching mode to provide a strong guarantee for training animation talents that meet the needs of the times.

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