

Research on the Application of Computer Artificial Intelligence Technology in the Production of Film Digital Media Animation

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Abstract. Once the frame-by-frame shooting as the main body of animation, it has gradually become invalid under the background of modern computer digital technology. Animation and film have no boundaries, but the fact is the opposite. Animation, a special communication medium, is in the current pan-media era. Its independence has become increasingly prominent. This article mainly combs the animation and film production technology, visual shock, visual and psychological perspectives, analyzes the reasons for the failure of frame-by-frame shooting, and discusses animation from the impact of the different shock experience and the exaggeration of deformation on the viewer's visual psychology. An important boundary with the movie.

Keywords: Film, digital media, animation production.

1. Introduction

Compared with ordinary movies in the early days, the animation production process is complicated, the production cycle is long, and the industrial production cost is higher, which limits the development of the animation film itself to a certain extent. Despite this, the unique aesthetic taste of animation has gradually evolved from a short supporting role into an animated feature film. From these regulations, animation and general movies cannot be covered by the word "movie", but continue to draw boundaries. It is necessary to discuss the impact of artificial intelligence technology on the production of film digital media animation in the context of the "art of the digital copy era" where artificial intelligence black technology is constantly emerging.

2. Digital Media Technology

The 21st century is an information age. Information technology, computer technology, and digital technology are widely used in various fields. Natural art is no exception. Digital media technology is the product of the combination and development of art and high technology. Including scene design, character image design, multimedia post-processing and other aspects. Involving digital information processing technology, digital information storage technology, digital information acquisition technology, digital information management technology and other technologies. It is a high-tech means of comprehensively processing text, sound, graphics, images and other information through modern computing and communication methods, it is the computer animation technology widely used in the digital entertainment industry. Digital media has strong expressive power, fast dissemination, interactive, integrated, and interesting. It integrates various media forms and provides technical support for the reform and innovation of animation design [1].

3. The technical status of animated films

Today's animated movies are difficult to recognize from the visual senses of the actual use of technology behind them. Because computer digital technology can completely convert three-dimensional technology production into two-dimensional effects, or convert two-dimensional into three-dimensional effects, but it is impossible for viewers to recognize the technology from a professional perspective, and can only be judged by the presentation of visual sensory effects. Three-dimensional or three-dimensional animation. For example, many scenes in the two-dimensional

animation "(Big Fish Begonia" and "Quiba" are actually made with three-dimensional technology, and then converted to two-dimensional animation effects. Therefore, whether it is two-dimensional or three-dimensional animation, in terms of production technology the above can now be completely completed by computer simulation. For example, the traditional "frame-by-frame shooting" is used to distinguish animation from film, which is obviously out of date [2]. The process is shown in Figure 1.

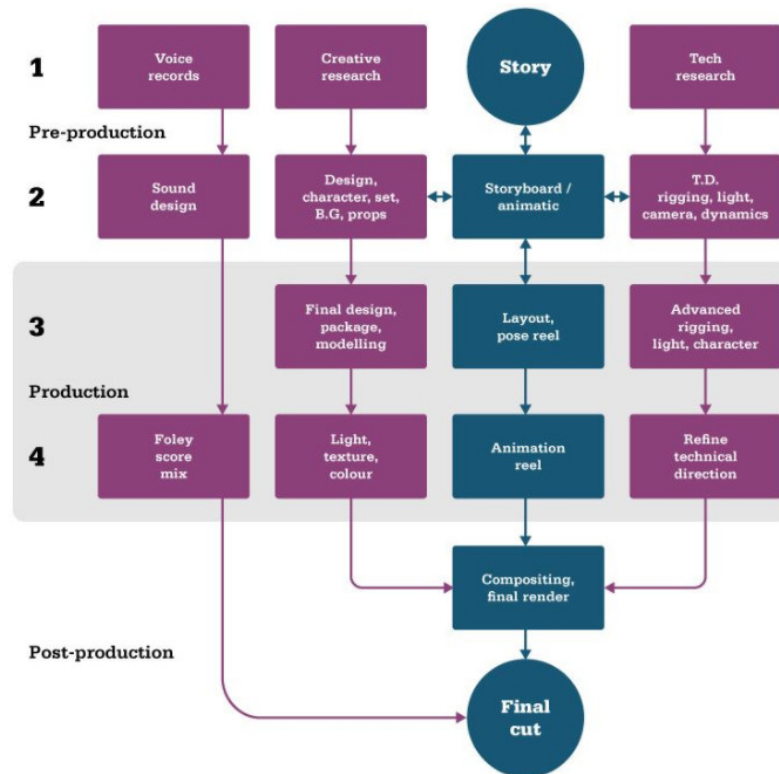


Figure 1. Research on the Production Process of Film Digital Media Animation

4. The transformation of animation production under film and digital media

Traditional animation production has undergone a huge change. Both the pre-shooting and post-editing production have changed, so the revolutionary role of digital technology in the animation industry cannot be ignored. How to reasonably use digital technology to produce better and more perfect works is worth thinking about. Compared with the traditional animation production methods in the past, through the special effects of digital technology, the creators can completely replace the pictures and scenes recorded by the camera lens in the traditional film with digital technology, and the film fragments can be The images obtained by shooting can also be synthesized through digital technology to obtain a special picture different from the real image, so that the relationship and effect of the image picture can be arbitrarily changed through the digital technology. Many films nowadays use a combination of real shooting and virtual images [3]. At the same time, the special effects of some software are also a powerful advantage. Many special effects that cannot be realized in the present can be displayed by software. This gives creative staff a lot of space. For example, the magic school in the movie "Harry Potter" uses art models and digital synthesis to achieve stunning visual effects. Another example is the creation process of the "Lord of the Rings" series. In the early stage, artificial intelligence was used to simulate various scene actions, so that the film achieved a certain visual effect [4].

5. The characteristics of animation production in film digital media

5.1 Basic concepts

The information society provides a broader world for the combination of art and science. Digital media art is a new form of artistic expression that combines the application of digital media technology and artistic design. It uses digital technology to complete artistic creation and digital products in the field of art. Applications. Animation design is a comprehensive art involving music, art, dance, photography, television and film, animation games, advertising exhibitions and other fields. It brings together the infinite imagination and creativity of human beings, and transforms inactive pictures into the influence of the ability to move, to show the non-existent things vividly. At present, the types of animation include two-dimensional animation, three-dimensional animation and CG animation, and the animation image designed by computer artificial intelligence is more realistic and the colors are more gorgeous.

5.2 Strengthen the details

In the process of designing animation in digital media art, the processing of details has been strengthened. In terms of animation background, plane composition, three-dimensional animation, and sub-shot scripts, digital technology can achieve fine resolution and timely deal with what is easy to appear in the design process. Problem, complete multiple links of animation design with high quality, and improve the effect of animation design.

5.3 Improving the charm of design animation

With the continuous development of computer technology, core technology equipment and software such as professional comic software developed by computer and Internet technology are widely used in the field of digital media, which can more reflect the artistic charm of animation design in the artistic creation of pictures and the dynamic processing of time. Therefore, the reasonable and efficient use of core technology software is the key to improving the quality and level of animation design.

5.4 Superb modeling ability

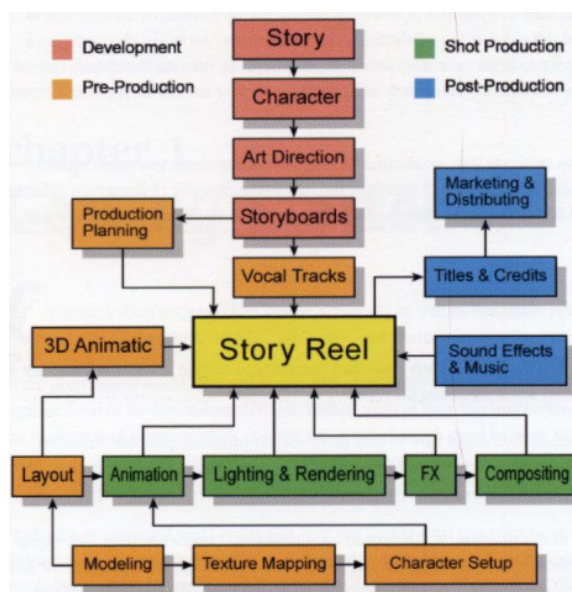


Figure 2. process of post-production in computer big data

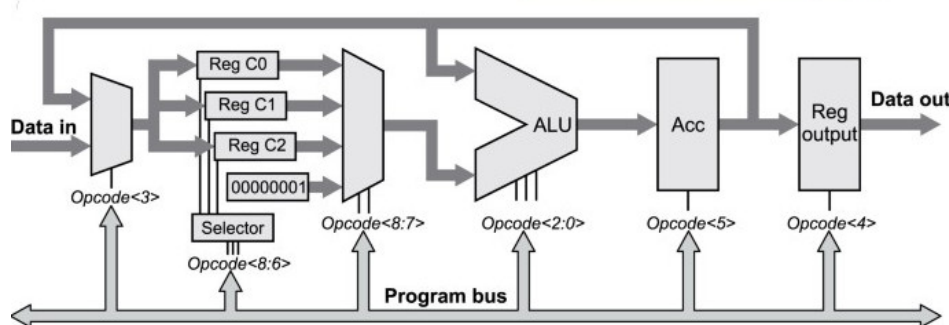
Producers use computers and a series of mathematical methods to realize the design and production of animations. They are not restricted by objective existence. They can not only realistically simulate objects or landscapes that exist in reality, but also can simulate objects that do not exist in reality. Or

landscape. This function is beyond the reach of real-time shooting methods and hand-painted methods. Specifically, computer animation can generate the following shapes: artificial geometric objects, movies, digital media animation production software provides a variety of planes, curves, curved surfaces and other generation tools, which can generate a variety of realistic and vivid shapes, such as buildings, furniture, utensils, etc., Can also generate imaginary abstract objects. Natural scenery With the development of computer graphics in recent years, it has become a reality to generate various natural scenery with movie digital media animation software. The computer big data process is shown in Figure 2.

5.5 Unconstrained animation realization ability

In film digital media animation, the change and movement of objects are also not restricted by objective existence. We can arbitrarily specify the movement direction and trajectory of the object, grasp the shooting angle and the characteristics of the lighting arbitrarily, and let the object change arbitrarily. The fictional nature of the movement is shown in the car advertisement. Several white horses emerge from the waves rolling on both sides of the car. This is an impossible scene in real life. The continuity of shooting, film digital media animation can achieve continuous shooting from the macro world to the micro world, and vice versa, which is also difficult to achieve by other means of expression. For example, we often see the lens in movies: the "camera" shoots the earth from space, and then the lens is continuously pushed forward, passing through the clouds, showing the sky above the city, and then moving continuously.

5.6 Abundant texture performance capabilities



Figurev3. Data flow process of computer big data post-production

Film digital media animation production can realistically express the texture of objects through the selection of materials and the design of lighting. The choice of material the texture of the object depends on the color, the brightness of the surface, the transparency characteristics, the reflection characteristics, etc., and these attributes depend on the materials that make up the shape. Film digital media animation production software provides a rich material library, such as glass, metal, water, marble, wood, fabric, rubber, skin and other materials. Film digital media animation production staff can not only choose a certain material for modeling at will, but also assign different materials to the same shape. Film digital media animation production software can also make the material characteristics change flexibly over time. Changes in material properties include color changes, transparency changes, and brightness changes of the material. Film digital media animation software can also repeatedly modify the material of the shape by changing various parameters to produce ideal effects. In film digital media animation, the characteristics of a material are determined by a series of mathematical parameters. Different parameters produce different effects of the material. Lighting design the lighting design directly affects the texture performance of the shape. The lighting design in the film digital media animation has the following characteristics: the type of lighting can be determined freely. The types of lighting include: point light source, parallel light source, photographic light, sky light, and MAP light source used to produce metal, glass and other bright effects; the color and intensity of the light can be determined at will according to creative requirements, and their

changes over time; Determine the position and movement of the light at will; it can produce the shadow effect and reflection effect when the light illuminates the shape. The process is shown in Figure 3.

6. The creative path of animated films under the background of artificial intelligence

6.1 In line with the sentiments of the times

As a brand-new technical means, artificial intelligence must conform to the sentiments of the times and meet the actual needs of the audience in the creation of animated films. As a mass cultural product, animation must fully meet the actual needs of the audience if it wants to realize its own market value. Because the higher the audience's acceptance and satisfaction with a certain animation work, the higher the product consumption rate. An animation has created an animation miracle with a box office record of nearly 1 billion. The success of the film is because its theme has the feelings of the times and has aroused a wide range of emotional resonance from the audience. The current film and television consumer groups are dominated by young people. These people gradually fade away under the baptism of the years. Behind their maturity, there is more confusion. At this time, the return of the childhood hero, even without magic power, can break through numerous obstacles. This happens to hit the audience's weakness, and success becomes a matter of course. It can be said that the popularity of excellent works fully proves the market appeal of national animation.

6.2 To further improve originality

On the basis of meeting the emotional needs of the audience, it is good at guiding the audience through the way of entertaining and entertaining. To this end, the main body of national animation creation must strengthen the sense of innovation, and create a matrix of high-quality digital movies while enriching creative elements and shaping brand personality. High-quality movies are not only the pleasure of narrative or consumption, but also the emotional resonance and cultural identity of the universal dimension. Therefore, for national animation production, the real meaning of creating high-quality movies is not short-term economic benefits, but through long-term accumulation and precipitation, spreading mainstream values in animation works, and ultimately using word-of-mouth marketing to maximize the value of digital movies.

6.3 Satisfying the narrative style of animated films

Animated films conform to the basics of film narrative first, but compared to films, their categories are richer and have more non-linear narrative expressions. The linear narrative method often refers to telling the story in one line, which is equivalent to "sequence", such as "Jurassic Park" and other movies. Non-linear narratives are often similar to the way of prose writing. Small stories are connected to other stories. The complex is often more complicated, and more methods such as "interpolation" and "chaotic linearity" are used. Animation art carries human imagination and creativity, and the traditional single linear narrative mode cannot meet the growing psychological needs of people. However, animation based on virtual images is very different from live-action movies after all. Such virtual images and virtual scenes have produced unique charms that are different from live-action movies. With structuralism, deconstruction, semiotics and other thoughts, the influence of literature and other creative fields continues to deepen, and multiple narrative techniques are constantly being used in the field of film, as is the art of animation. If a clear linear narrative model can still be used to take care of the receptive ability of children and teenagers, then when facing adults with strong receptive ability, the simple linear narrative model cannot meet their psychological needs at all.

6.4 Realize the dynamic interaction with the audience's aesthetics

With the development of modern information technology and network technology, interactive animation has gradually appeared in front of people. With the support of digital processing, computer network, modern communication and multimedia technology, interactive animation has been more and more widely used. Different from the traditional animation art form, interactive animation can communicate and interact with the audience when it is played, which means that the broadcast of animation can be controlled by the audience to a certain extent. The emergence of interactivity has changed the passive acceptance of the audience in traditional animation appreciation. For example, in today's popular animation, the viewer can use the mouse or keyboard to control the animation process to a certain extent. The emergence of interactive animation brings dynamics and interaction to the aesthetic process of animation art. Interactivity is the unique label of animation in the new media era. The audience can interact with the scenes or characters in the animation while enjoying the animation. In the process of interaction with animation, the audience is no longer an "other" independent of animation, but a participant in animation creation. Compared with traditional animation art, animation in the new media era has changed the passive state of the audience as the aesthetic subject in the animation aesthetics. The entire aesthetic process is a dynamic process in which the aesthetic subject and the aesthetic object can freely communicate with each other.

7. The research trend of movie digital media animation production

7.1 From the research content

From the perspective of the trend of research content, from the expressions of animated characters, to the scenes, and then extended to all aspects of the animated film. The body is a trend from point to surface, and then from surface to body. First of all, in traditional stop-motion animation production, the production of facial expressions of characters is restricted by the backward technology, and there are some advantages in the vivid flexibility of expressions and the convenience of production. Big flaws. Artificial intelligence technology solves this long-standing technical problem. Use software to make a head model, adjust facial expressions in the software, number and create artificial intelligence. If there is loss, use the same method to copy, and there is a lot of room for modification. The time cost is low, and the overall size can be adjusted and scaled in the same proportion. This point-based research lays the necessary technical and practical foundation for the full integration of animated films into digital humanities research.

7.2 From the perspective of research

From the form to the spirit, to fully integrate into the digital humanities. With the acceleration of modernization and the development of national film and animation, in the environment of "Nezha", the national style digital animation has gained more than 5 billion box office, the national film and television animation Both art and technology require innovation and development. The wider application of artificial intelligence technology to film and television creation is bound to be the future direction of development. Especially in the current vigorous development of new media, this technology will inevitably be widely used in digital film creation to promote the development of digital humanistic content production. The so-called "digital humanities" refers to the collection, processing, organization, service, research, education and other activities of related information resources around specific research objects in the field of humanities and social sciences, the digital preservation and application of knowledge ontology. In other words, "digital humanities refers to the combination of digital methods and traditional humanities and academics. It is an interdisciplinary movement and is the further exploration of digital humanities and emerging technologies in the computer field.

8. Conclusion

In the era of artificial intelligence, the narrative and aesthetics of animated films have undergone tremendous changes. The creative method breaks through the constraints of time and space, and can achieve any effect without restraint. Animated films have ushered in a cross-era change, but under artificial intelligence Animated film production must also conform to the sentiments of the times, gain the recognition of the audience, and at the same time realize the interaction with the audience, and the audience has the freedom to participate in the creation. When the audience manipulates the development of the animation storyline, they themselves become the design objects of the animation designer. The audience is not only the manipulator of the animation plot spreading, but also the manipulated person in the animation design, the interactive behavior between the animation and the audience and the non-narrative. Linearization development has become a significant feature of the development of animation art in the new media era. Animated films in the era of artificial intelligence have gained a higher free development space from production to aesthetics.

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