Application of computer 3d technology in the modern film and television post-production

Gang Su, Xuefei Hong
Huaian College of Information Technology, Jiangsu Huaian 223003, (CHINA)

ABSTRACT

In recent years, the film and television industry develops in our country, and the film and television has become the essential part in people's life. Development steps have been quicker, making people's life more colourful. Along with the computer 3D technology application in aspects of film and television special effects and animation, computer 3D technology for the influence of film and television works is becoming more and more big. Computer 3D technology began to appear in the film and television, which plays a prominent role in animation and video effects. A lot of film and television works began to join computer 3D technology, which increased the quantity of film and television works and had big influence in the film and television industry. The technology can make the camera movement that traditional methods can not get, some amazing visual effects of character animation or fantasy scenes, the movement of virtual camera for short periods, the fantasy scenes, character animation and some amazing visual effects, making science and technology perfect union. It opened up a new heaven and earth for creative play. How to effectively use computer 3D graphics technology into film and television works has become one of the most attention topic today.

KEYWORDS

Computer 3 d technology; The film and television post-production; Application; Design.

PREFACE

After all of the work is completed, the film comes into the post-processing stage. As a new technology, 3 d technology gradually goes into people's horizons. In the design of the film and television works, the traditional actors' performance is also gradually replaced by animation techniques.3 d technology breaks the limitations of film and television shooting, makes up for the deficiencies on the visual effect in the process, provides infinite extension of space for film and television production via its flexible expression, creates amazing visual effects in the camera movement, the fantasy scenes, characters, etc, realizes perfect combination art and science and technology, and creates many excellent works with strong modeling ability, sports performance free, and rich texture. Film and television works through the three dimensional technology can give the audience a profound impression and reach a good visual effect.

A BASIC OVERVIEW OF THE COMPUTER 3 D TECHNOLOGY

Computer 3 d technology, also known as 3 d technology, refers to the role,the physical and scene 3 d model in virtual images on the computer, which sets the movement of virtual camera and other animation parameters according to the requirement, and adds specific materials, lights, camera, and environmental effects for the model to make its move in three-dimensional space with varies of form, zoom, rotation movement, deformation, discoloration, etc., then finally generates a series of vivid images.

THE CHARACTERISTICS OF THE COMPUTER 3 D TECHNOLOGY

Strong ability of modelling

Computer 3 d technology relies on the powerful operation ability of computer, and adopts a series of digital methods to realize the animation design and production, which breaks the limitations of live action means and hand-painted means, makes up for the deficiencies on the visual effect in the process, realistically simulates the real object or landscape without limit from objective existence, and creates objects or landscape which does not exist in reality. Its effect even has reached realistic-looking effect.

The performance of computer 3 d technology is free

In images generated form computer 3 d technology, objects can be in change of the multiple perspectives, and the direction of movement and trajectory can be in arbitrary change, and the change of the object and movement is not subject to the restriction of objective existence. In the realization of freedom of object form, fiction and the continuity of shooting, the motion of a strong visual impact effect is more flexible, in order to achieve the effect of the real life that cannot be captured.

Quality performance of computer 3 d technology

Computer 3 d technology realisticly express the simple sense of objects through material selection and the design of lamplight. It can choose their own to create a different grain material, making the material color, transparency, character such as brightness and flexible change over time.
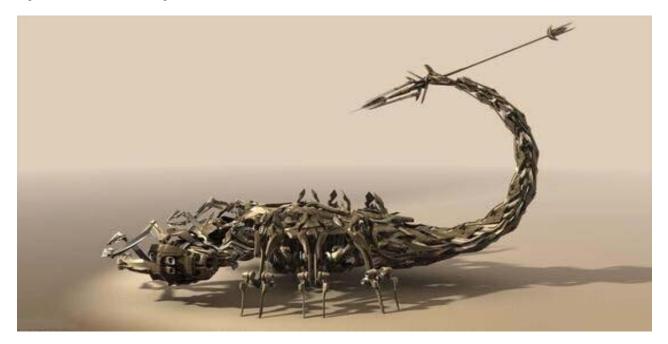

Figure 1 : 3D production paradigm 1

THE TECHNOLOGY OF SYNTHESIS AND PROCESSING EFFECT

Synthesis of editing by definition in a computer can be to fine synthetic image through the post-processing. It can synthesize multiple voice and image, making the whole plane painting an art by tile and texture mapping. Generally plane image adjustments are in accordance with the following format for the brightness of the color, the softening of the image such model for processing. Technology is improving people's living standards, and people are under the guidance of technology to a more wonderful life. Look at those beautiful pictures and that kind of touching scene, besides actor natural blend, the most important thing is the use of special technology. Technology can make the film and television become more colorful and more charming. In the traditional thinking, stunt was implanted false scene, not causing the audiences' heart, which just uses technology to improve image picture. This way of understanding causes some deviation, but joining the stunt can also move modern film. Modern entertainment media has payed more and more attention to the use of computer 3 d technology. Since it appeared, the technology has occupied important position in the film and television entertainment media. People can feel the role of technology, realizing that technology is everywhere in life.
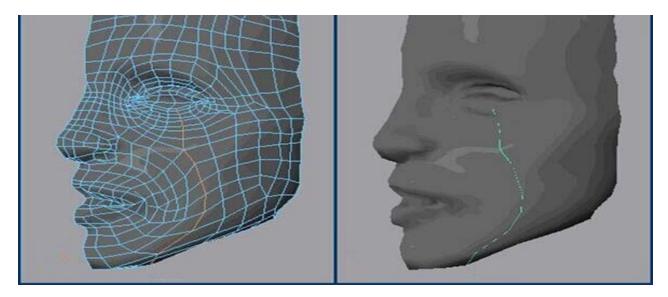

Figure 2 : 3D production paradigm 2

Due to its particularity,3 d technology plays an important role in the international film and television production platform. It's free and efficient features are widely loved by industry. Hollywood film and television production performance is in the world first-class film and television production, the name of which establishes is because Hollywood uses the preface technology - computer 3 d technology in the world. Hollywood offers a wide range of the technology platform, lettng technology flourish in the movies and fully demonstrating the importance of computer 3 d technology in the movie. In the birth of the work, they are made by using the computer 3 d technology. These representative works deeply reflect the role of technology to improve the level of film and television. It is the technology that has the effect that the traditional model can't achieve, therefore, the technology has been widely used around the world since germination.
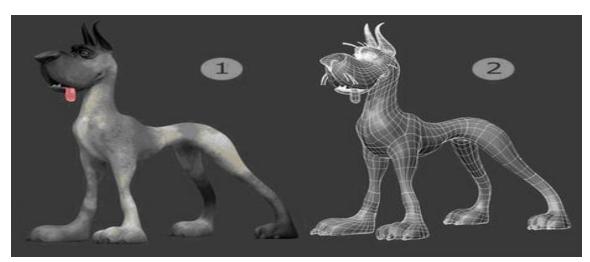

Figure 3 : 3D production paradigm 3

Figure 4 : 3D production paradigm 4

THE REQUIREMENT OF 3 D TECHNOLOGY APPLICATION AND PRINCIPLES

When a well-made film and television works keep your eyes for one of the bright, I don't know if you noticed that the unique idea and beauty. And one more good ideas are combined with the technique of computer 3 d. 3 d technology has become any film and television works' nods eyeball pen of integral. A high level of animation works is rich in design ideas and high aesthetic value. Wonderful three-dimensional works must comply with the aesthetic requirements and principles in creation and production manufacturers. We've seen a lot of outstanding film and television works, and the excellent works of literature and art success should be firstly due to its great ideas. Without these strong expressive force of computer generated, all the thoughts and ideas is a castle in the air. Some lag, for the reasons are the lack of a sophisticated and unique creativity, and unreasonable use of CG technology, causing character modelling clumsy and stiff, so it can not reach the expected effect. The composition of animation scene, music, material and colour are important factors to enhance,appeal and foil atmosphere. Animation works should not only reflect the property but also has a strong view and admire a gender, and it must have connotation, meaning and depth to a certain extent, thus will appeal viewers to watch repeatedly, never tireless, and often come up with new discoveries and daydream, so that the three dimensional animation not only has the value of the service for the film and television works, but also can effectively improve the enthusiasm of the audience. With the development of the era of digital TV, the application of the three dimensional animation technology will bring new opportunities and challenges to film and television works.

3 D TECHNOLOGY BRINGS NEW REVOLUTION TO THE TELEVISION POST-PRODUCTION

In the actual creation, for the sake of a purpose to proceed the film and television post-production, all is to coordinate work purport intent. By use of digital technology revolution, it develops the artistic creation around the subject propagation purposes, refreshes the art creation and performance, breaks the audiences' inherent thinking imagination, and then achieves the objective of the work.

THE THREE DIMENSIONAL ANIMATION PRODUCTION PROCESS

From all the technology of design and production of the three dimensional animation, the production process can be divided into three main stages: the early stage of the production, planning, medium.

The early planning stage

Prophase planning and design determines a three-dimensional animation art quality high and low; Plot design and the visual style of decisions are embodied in the early stage of the design. In the prophase work, the first one is the creation of the writer or the director of animation script, which needs to contain the plot, the customer's requirements, as well as the film orientation, style, features, etc. After the complete script creation, modelling can be set, and change of phase need to be involved in the whole animation style and animation scene, props, characters, special effects, color and so on carries on the localization design. The focus of this phase is to surround the script work and present perfect visual display. Designer eventually draws a shooting script about these specific idea and the idea concept to explain the lens movement and storytell as a three-dimensional reference for the follow-up. Small changes in the early practical work will have a lot of influence on the later production, which is extremely important, so best prophase planning preparation work is very important.

The medium-term production stage

Medium-term production stage is mainly to carry on the elements of the animation and the set of animation points mirror.

In the three dimensional animation, the model consists of role, scene and props. 3 d character model will replace the real actors' performance; The scenario model will run instead of the scene in general film and television, which provides the role of performance and the development of the plot with places and foil atmosphere; Props model refers to the type of role that can be mobile object, small to a tree grass, big to transport equipment and other props model production category. 3 d model in this work link is like a 3 d world sculptor, making various models for 3 d animation. In these three models, role model is most demanding.

They create Layout storyboard (3 d) with the completed model according to the script and a shooting script, including the camera arrangement, basic animation, lens time settings, and so on. This is set to prepare for the next link of animation.

Material is make-up of the 3 d model, which makes the set of the work through the object color, texture, bump and specular.

The post-production stage

Late is to edit the completed animation for lighting, sound effects, and 3 d special effects.

Lighting engineers light up the animation scene and apply colours to a drawing the atmosphere according to a preliminary concept design style positioning in this part. This process is a form of visual artistic creation process. Lighting is the soul of the image creation. Three dimensional animations can be used to simulate the light and shadow of the natural world believable.

3 d effects can simulate reality beyond reality, and even do the actual effect that cannot be taken in the natural or unnatural's various special phenomenons. With these information, to add, delete, change, check and print according to the specified content is the most basic requirements. However, only the data of the list is not enough. In order to meet the demand of management decision, we also need to be able to specific data statistics to obtain the information we want to know, such as equipment intact rate and utilization rate. In addition, we would prefer to generate enough charts to show the information we need to know in a more intuitive form, such as figures of the distribution of instruments and equipment, instruments and equipment investment sequential diagram, etc. The steps are shown in Figure5.
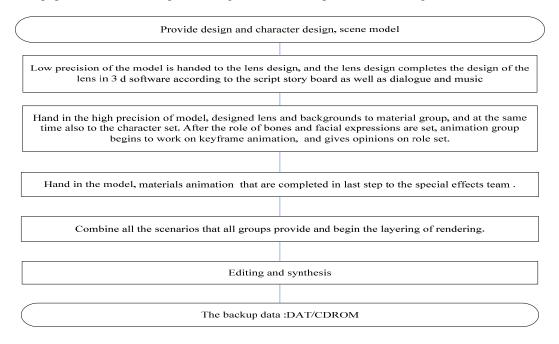
Provide design and character design, scene model

Low precision of the model is handed to the lens design, and the lens design completes the design of the lens in 3 d software according to the script story board as well as dialogue and music

Hand in the high precision of model, designed lens and backgrounds to material group, and at the same time also to the character set. After the role of bones and facial expressions are set, animation group begins to work on keyframe animation, and gives opinions on role set.

Hand in the model, materials animation that are completed in last step to the special effects team .

Combine all the scenarios that all groups provide and begin the layering of rendering.

Editing and synthesis

The backup data :DAT/CDROM

Figure 5 : The three dimensional animation production process

SUMMARY

Artistic charm that computer 3 d technology brings to the film and television works is obvious to all. When we sigh the infinite power of this new technology, we must not ignore or forget the theme of the work. In film and television works, the ultimate goal of 3-d technology is to work itself throughout soul service. Creativity is the soul of the works. Our responsibility is to use 3 d technology to show perfect works of creative ably. When technology and art and creativity separates, it just can count as a magnificent pretensions. When computer 3 d animation is used to support and illustrate ideas that people put forward, it can achieve a wonderful story. Technology and art are often the subject of debate, and technology and art's perfect unity is the first premise and the ultimate goal of computer-generated 3 d. We should follow the principle that technology services for art and art is in the service of the creative design in the film and television production.

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