Remodeling and Optimization of The Animation Intelligent Oriental God Painting Prototype Based on OpenGL

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Abstract:In this paper, a fountain model based on OpenGL particle system is designed, the properties and changes of particles in the model are discussed in detail, and the fountain features such as dynamic changes and parabolic changes with strong realism are realized. It has always been loved by the world. After the 2015 animated film "The Return of the Great Sage" gained a good reputation for the remodeling of Monkey King, in 2019 "Nezha: The Devil's Child Comes into the World" once again successfully reshaped another oriental mythological prototype with a rebellious spirit, Nezha. Embed algorithms such as forward and inverse kinematics, trajectory planning, and collision detection of robots to realize multi-robot 3D virtual simulation, offline programming and virtual teaching, and perform experimental verification of a single entity robot.

1. INTRODUCTION

With the continuous improvement of computer simulation technology, people have higher and higher requirements for the simulation of real things, and the importance of simulation technology has become more and more prominent, especially in 3D games [1], military exercises and simulation experiments. To seek mathematical models that can accurately describe various phenomena and landscapes in the objective world, through investigation and research on the relevant research and implementation status of domestic and foreign scientific research institutions and enterprises, according to the existing research results [2], it is concluded that the multi-robot virtual simulation experiment There are mainly five kinds of platform implementation schemes: with the help of professional robot workstation. This kind of software has high requirements on the real-time graphics display capability of the computer [3].

Graphics display is a typical performance-intensive application, and the level of image rendering performance can express the comprehensive performance of computer hardware and software. Under the condition that the hardware configuration is relatively fixed, the performance optimization at the software level plays a decisive role. China's mythological system has never been single [4]. This article discusses the mythological prototype of Nezha as an example. Nezha first appeared in China because of the introduction of Buddhism from India. In Buddhism, Nezha is a worshiper of Sakyamuni. The mythical Nezha is the Dharma protector of Buddhism, and the prince of the northern king of Bishamon. His duty is to protect the Dharma, eliminate evil, and protect the world [5].

Among them, the most representative is the film "The Devil Child of Nezha Comes into the World". There are many elements of traditional Chinese art in contemporary Chinese animation films, which have distinct national cultural characteristics and are unique [6]. The author takes "Nezha's Devil Child Comes into the World" as an example to analyze the influence of traditional art in contemporary animation. That is, the pursuit and struggle for self and destiny, but on top of this, combined with the current social background, it presents a more profound practical significance. With a progressive narrative rhythm and a creative image tone, the film attempts to build a fantasy space with historical texture and detachment. Yang Yi's "Chinese Narratology" (1997) [7] discussed the issue of Chinese narrative tradition in combination with the discourse of Western narrative theory, and Dong Naibin's "Research on Chinese Literary Narrative Tradition" (2012) [8] questioned Chen Shixiang's assertion that Chinese narrative tradition is a "lyric tradition".

As a rare "phenomenal" animated film in recent years, "Nezha's Devil Child Comes into the World" has won the domestic box office chase. From the perspective of the film's narrative methods [9], character modeling, and audio-visual modeling, it is obviously influenced by animation in other Asian countries and Western countries. Animation narrative research is to use the research results of narratology theory to conduct textual analysis on animation art and its culture related to narrative. Research belongs to the category of film and television narratology [10]. As for film and television narratology, it is generally considered to be first mentioned by Metz's "Film: Language or Language System" (1964). In order to conform to the aesthetic characteristics and aesthetic spirit of the times, more or less in film narration The archetype of the hero will be reshaped [11].

In the development process of domestic animation films, some specific mythological character prototypes with personality and spiritual charm are often requisitioned and rewritten. These characters are mostly known to every household due to the dissemination of literature and film and television. What is the particle system [12]? The so-called particle system is to describe the movement of objects and natural phenomena seen by people with a series of moving particles, and then map the trajectory of these particles to the display screen. Offline programming software (such as RobcAD, workSpace) [13], features It is because the underlying algorithms of commercial software are not open, and users cannot embed their own control algorithms for algorithm analysis; Professional kinematics and dynamics analysis software ADAMS is used [14].

According to the classification of CPU, the current mainstream domestic computers mainly have the following three categories. Feiteng processor series CPU domestic computer, Feiteng processor is developed by National University of Defense Technology, compatible with ArmV8 instruction set released in 2011, the typical model is Feiteng 1500A, with 16 cores, main frequency 2GHz [15]. The first major evolution in the image of Nezha's mythology came with the evolution of Li Jing into the Heavenly King Bishamon. Li Jing was a famous military scientist in the Sui and Tang dynasties, and Emperor Gaozong of Tang praised him very much, and the Tang Dynasty even enshrined him as Duke Wei. After the deification of the Tang Dynasty, there are four main sources of themes for traditional Chinese animation, namely folklore, fables, traditional literature, and myths." Chinese classic novel "Fengshen Romance" [16].

2. THE PROPOSED METHODOLOGY

2.1 The OpenGL

OpenGL also defines the concept of a local coordinate system. The so-called local coordinate system, that is, the coordinate system takes the center of the object as the coordinate origin, and operations such as rotation or translation of the object are performed around the local coordinate system. The time statistics module is used for statistical algorithms Program run time. The number of clock cycles in which the program code runs is obtained by obtaining the value of the CPU counter twice before and after the code is executed, and then a clock cycle time is calculated by the CPU frequency. For the data storage, data calculation, data submission and other stages in the typical rendering process of OpenGL, combined with the author's work Based on the optimization experience of OpenGL display software in China, the following five typical key aspects of possible performance problems have been extracted.

At this time, when the object model performs operations such as rotation or translation, the local coordinate system also performs corresponding rotation or translation operations. It should be noted that if the object model is scaled, the local coordinate system must also be scaled accordingly. The graphics processing layer realizes realistic 3D multi-robot 3D motion simulation, including drawing robots and working scenes, performing graphics rendering, establishing Multi-robot virtual prototype. The CAD interface is used for data connection with mainstream 3D design software. Before the OpenGL client performs vertex coordinates, texture coordinates, and color matrix calculations, it first stores the original coordinates of the rendering object in memory.

For example, if you want to draw some points on the screen, you must first store the original coordinates of the drawn points in the memory, and you need to use a software container for data storage. All particles are stored in a particle group, which is a group of particles with the same force gather. Users can define multiple particle groups with different behaviors to be called separately, but only one particle group can be active at a certain time. It is a key step in software development to build a virtual prototype of a robot with controllable motion in the OpenGL environment. OpenGL only provides some simple drawing commands (points, lines, polygons), and it is not convenient to directly draw models composed of multiple parts and complex surfaces such as robots and work scenes.

2.2 The Nezha's Devil Child Comes into the World" Animation Intelligent Oriental God Painting Prototype

This animated film subversively adapts the two characters of Nezha and Ao Bing in the novel. The two protagonists are both good and evil. At the end of the film, they abandon their previous hatred and agree with the outside world, which makes the film's thinking reach a new height, showing the spirit of freedom, independence, courage and struggle of contemporary youth.

The prototype of the bronze enchantment beast that appeared in the film came from the golden mask and Sanxingdui bronze statue unearthed from the Jinsha site in Chengdu, which clearly reflected the heavy and simple bronze ware production characteristics in ancient my country, and demonstrated the cultural crystallization of the ancient Shu civilization.

On the one hand, the animated film "Nezha's Devil Child Comes into the World" takes real life as a frame of reference, and strictly follows the appearance, endowment, joys, sorrows and joys of ordinary people to shape the characters' appearance, typical expressions, typical actions, and language characteristics. The character image is set with reference to the possibility of real life. Nezha is a very classic character image in Eastern mythology. "Nezha" means "nuo", the word means to drive away evil spirits, and the word "Zha" is the beginning of heaven and earth The first sound of the character also refers to justice. The combination of the two characters Nezha means everything is unfavorable and unstoppable. The characters of traditional animation often reflect the traditional virtues of the Chinese nation, such as kindness and integrity, industriousness and bravery, and fearlessness of power. 1. The traditional animation shows the traditional Chinese view of good and evil, that is, good will conquer evil, thus sublimating the theme of the film. Its shape also reflects the Yangshao wine culture in traditional Chinese culture.

In the film, Nezha swims freely under the leadership of Master Taiyi Zhenren, and its vast landscape and artistic conception is very oriental. In the original work "Fengshen Romance", there are only a few descriptions of the map of mountains and rivers, and director Yang Yu draws on Chinese bonsai art in the creation of the picture. In the new stage of globalization, we need to re-understand the dissemination of knowledge, which It is no longer a one-way cultural hegemony centered on the West for a long time, but a multicultural symbiosis, coexistence, sharing and progress of human knowledge dissemination. As Fei Xiaotong said, "each has its own beauty, and the beauty shares its beauty".

2.3 The Research on the Remodeling And Optimization of The Prototype of Animation Intelligent Oriental Painting

Traditional Chinese animation films contain the unique emotional characteristics of the Chinese nation, the most representative of which is the traditional Chinese philosophical thought of "harmony between man and nature, all things have animism". It also represents the flow and lightness of water. The dialectical relationship between water and fire represents the concept of yin and yang in traditional Chinese Taoism. It is mentioned in "Book of Changes" that "one yin and one yang are the Tao." This is manifested in three aspects: first, although the story itself has a strong local mythological prototype, it adopts the old way of narration in the way of narration. The grand narratization and even de-exoticism make the family and the individual the focus of the

narrative, which minimizes the limitations of context on reading movie stories.

This causal and causal contradictory setting embodies the fate of Nezha and Ao Bing that are destined to be inseparable, and also metaphors the unique interpretation and expression of "fatalism" in Eastern culture. Once upon a time, the "originality theory" has influenced an entire generation of young people, and it still has its own discourse market. In the film, Nezha was born with a "born" label labeled "magic". He was possessed by a magic pill by accident, so he carried innate misunderstanding, prejudice and even discrimination. As a typical hero image in traditional oriental mythology, the prototype of Nezha has the brave and fearless spirit known to the world, and at the same time, it also has the spirit of "rebellion". The more classic characters have certain similarities.

With the progress of the climax, the symbolic meaning of "anti-mandate" carried on the image of Nezha has been further deepened. Nezha's character also has a radical and impatient side, and because of this character, he has misunderstood the good intentions of his parents. The extensive and in-depth interaction of Chinese animation and Chinese films with the international market in recent years has laid the foundation for the birth of "The Devil Child of Nezha". The story can be local, but the production must be international, which has become a law in the film market.

3. CONCLUSIONS

This paper expounds the simulation implementation of the particle system based on OpenGl. First, it introduces the development of graphics and the overview of OpenGL. Through the introduction of the basic knowledge of OpenGL scene coordinate system and projection, this paper expounds the simulation implementation of the particle system based on OpenGl. The development of graphics and an overview of OpenGL, through the introduction of the OpenGL scene coordinate system and basic knowledge of projection, and the creation and development of a series of domestic animations of the same type, the creative idea of adaptation is adopted to adapt to the mainstream aesthetics of the film market and the audience's viewing. Demand has gradually become the preferred way of expression for creators.

4. REFERENCES

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