The Research of Performance of Van Gogh Painting 3D Scene

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Abstract

With the development of the digital age, multimedia technology constantly provide an opportunity for the new art creation and new development momentum, at the same time which can prompted the development of many forms of arts specially in field of heritage digitalization of cultural. Driven by the 3D paintings, such as virtual reality performance way can provide the user more unique experience. Since 2013, exhibition of Van Goph painting has convert the flat painting to the vivid painting scenes in the software, such method has attract many artist and creator to do such a exhibition in other different way. Van Gogh painting three-dimensional performance can not only use display in the exhibition center, but also can be implement in a variety of public area to display. Currently painting three-dimensional scene shows the popularity of facing following several problems, one is the multimedia digital performance of the technical still mean to exploring and related technology is not mature, second matter which is how to maintain the characteristics in many other art work and showing the unique figure when the art work is showing. How to maintain the right after releasing the digital painting. In this paper, from the prospective of the performance of the content and technical which is showing in the van Gogh painting scene , combined with interactive design method makes the participants getting involve into interaction scenario which include immersive experience, gesture of interactive, virtual reality of light and model making , etc.

Key word: art representation of 3d painting Van Goph painting interaction, tech of virtual reality

Introduction

Development trend analysis of the development of media technology, the viewer for the pursuit of more and more three-dimensional imaging, 3-d into painting as a kind of art form, animation scene virtual reality into for a form of painting, is through the visual and auditory information to convey to the audience. Domestic developers also through the understanding of its culture and reinterpretation formed the different style of audio and visual style. Three-dimensional performance way not only with the content also lies in the exploration technology, through gyroscope in ios devices induced cell phones pull (amplitude corresponding to present dynamic desktop wallpaper application of the painting, legendary We Chat "3d" bear, these applications are reflected the technology in the field of art. In 2016 in the capital market of the most popular noun is virtual reality (VR) technology, after the three-dimensional virtual reality is a combination, the technology is what people call, the content of the real world and virtual world a technology content integration. It is through the sensor real-time computing and intelligent matching technology, the virtual information directly added to a form of the real world. Both information complement each other, the overlay, and then achieve the ultimate purpose of augmented reality. And one of the purposes of this article research is in order to let more people know the charm of a Van Gogh painting, know the story behind the Van Gogh painting, arts, leading in the field of painting show in a foreign country, through research the domestic good works can also occur.

2.1 The current condition of classical painting reinterpretation

The reinterpretation of classical art painting is a new form of design of art. The majority exhibition is presenting the original painting. so the art master often pay a lot of bill in the insurance to make the painting safe regarded the show of original painting has a certain shortage which is not easy to carry it on ,limited influence and the area of the presentation. But the virtual exhibition can overcome all the barrier and getting rid of this fact of unconvient to provide the audience more unique and pre found experience.

The exhibition holding on the difference exhibition cans wildly expressing its influence and increasing the reputation among the people and audiences in the certain field.

2.1Sensoryprojection tech 2.2 Para projector effect

At the beginning year of 2014, the digital painting exhibition named "van Goph live" which is mainly expression the Van Gophs painting where holding at San Petersburg in Russia (below the chart), the new tech is applicator in this event is the hi-tech called SENSORY4, the tech method used in this events is the combined with the motion lights and the slow motion picture shutting at the real place. The designer used couple of projector and the artificial grant wall so that they can show the movement Vogh scene to the audience and people who surround the particular place. Imaging this scenario, when audience walking into the stage which is fully covered by inductive sensor.
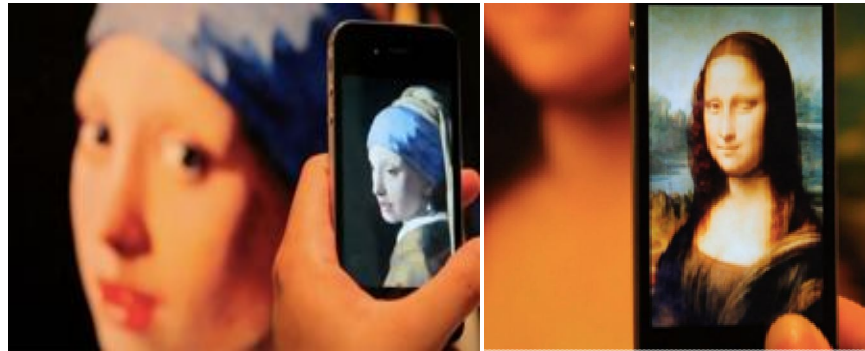
The sensor can automatically detected the motion occur by the people and the object, and then symphony turn on and scenes is begin to move slowly. This events can able them knowing the simple story about painting though the film as well as appreciated the high quality visual video. In other hand the exhibition can make people who don't have such a relative knowledge background and don't know much about the paint starting to cultivate their sense of art, more importantly. They can understand the multimedia tech has Impact on every perspective of classical and modern art. Let the exhibition show is no longer as a ppt presentation. Compare the common way we look the painting, the 3D digital painting is totally change the way we used to do. At the past, audience prefers the original real painting than the fate copy one. Because they can see though this painting in the texture of the paper or the direction of the pen curve showing on the paining. Also have its unconvient perspective such is boring for the people who do not familiar with the author and his painting. Mostly for those people they are remember noting about this whole exhibition or just taking some pictures as a souvenir when the finish the visiting at the art center. But the classical 3d painting can change the problem in curtain way.

As a time going on,   the innovation of technology about the three painting exhibition enable the famous painting become more unique and more vivid. Old and traditional video cannot meet the customer requirement any longer anymore. They prefer the art work combine with the element like the ship, motion, color, content, sound. Which is combined multiple forms to show, the redesigned of the painting always is set up with the new technology Motion graphic, interactive connected with the digital sensor? Presentation by new technology becomes, more motion, less boring, and more widely influence. Combine between the Chinese traditional cultures and the high technology from over see, which can, in some extent to complimentary, advantage with property propaganda, and planning .To painting exhibition will have several high light spot, which can attract people attention. To focus on the new technology and the way we presentation. As the people, consumption potential is increasing as well as the increasing of the people aesthetic Value orientation. The traditional presentation will be vanished. Following, thrived by the interactive painting design art.

(Ar-art){ picture 3.1. 3.2}is the creatively art application design by the Japanese designer. The app is showing the limited contents but the way they showing profound meaning is fantastic and attract the audience attention. User can regarded it as a ar app which is combine with the real world and the unrealistic world. The tech is using the unreal contents and the message and few words add to the real scene. Ar technology is using in many ways especially widely using in the field of entertainment. The mobile device platform have many relatively app ,but none of that can compare with the Ararat .Ar-Art can make the 2d flat painting convert to 3D .but it's not enough . Stand still painting can be motion just programming by the designer just simple as making a short movie.

Using the camera of the phones shooting directly to the painting for instance (the girl wearing a preal).once your camera is face to the surface of your painting then the character in the painting snennaire will smile at you. if you towards to the Alice dream then the rabbits will jump and run. if you shooting towards the flower ,the flower will open for you. Now software Powered by unity can change the way we see the painting .from the example which we listed just now may open a new perspective way to design a work. From flat contents to the interactive 3D visualized contents, will showing us divergence of the art work.

Figure3.1 《the smile of men ails 》 Figure3.2 the girl wear heckles 》

2.2 The art performance of the 3D oil painting

Recent year the multimedia technology is developing so fast, the most of the handicraft is replaced by work though the computer. The man made painting can easily and directly show the meaning of story and the emotion. but it still have lots of problems to overcome, such as widely time of digital programming arrangement ,over high expense and the place limited. Recent year the multimedia technology is developing more maturely than the past few years .Digital work is taking place with the artificial art work. Some of this content carried over to the art painting themselves, either literally or in their aura, though the painting the audience can feel the profound meaning and the emotion .but it's still have a lot of disadvantage. For instance the long making period, over high expense and the limited volume of impressions in a short amount of time.

The traditional painting exhibition is holding in many occasions by exhibiting company, at this period of time, moving the painting will cause the uncovered damage. but the development of the computer hardware which can enable developer to focus on the creativity and the contents and ignoring the cost of transaction damage totally, simply using the 3d software to detect the painting and choose which one is suitable for the three dimensioned, discussing the creativity spot which can attract people attention, then trying to use the software to modified and created the digital 3d painting with this simply process, The plane so that people can be disengaged from the traditional paintings, boring text interpretation, using technology to change the form of viewing paintings. The three-dimensional display of paintings can be said is the future trend of display. Many foreign shows are often use the world's only original painting to attract audience attention and other gimmick to attract the audience, and people tend to think that the original is the best. It is very common for people who the art knowledge reserves are not abundant, they often visit just skim the surface, to see the image and the text, go home, and forget the outline.

And the new media technology with digital paintings reduction, which happens to be fit young groups feed their ornamental taste, Compared to their parents they are in the same period have a better education, for art appreciation also head dyed heard since childhood, and understand more about the world famous paintings, traditional display methods to some extent cannot meet their favor, so painting 3D display is the catering to their excitement. Their demand, form of creative expression also let them from the different angle understanding the meaning of paintings; understand the contents of the paintings from a new point of view, to re interpret the paintings. Oil painting three-dimensional art performance is the future of the basic display can be a good complement to the original painting. The original meaning of the author's inner world of strokes, 3D shows new art form. It can be said that the original three-dimensional technology become plumper, more profound and reaches into the more deep level.

4. Analysis 3d interact design work

4.1 Creative overview

Usually in a museum or exhibition hall, the audience to appreciate the static paintings, visitors standing next to the paintings to watch the paintings, paintings next to the text with the introduction, this is a traditional mode of visit. But if you want to break the traditional exhibition mode must be three-dimensional display of paintings at the same time, the team plans to make applications to meet the users, especially young users of the visitors to the demand. App mobile applications are a very good way. In many foreign shows. In the same time to do the advertising to provide two-dimensional code, after the scan can be downloaded applications. All of these elements are a way to complement the traditional display mode. Re creation of oil painting at the beginning of the painting will be two-dimensional, while adding the elements of the artist's own style. And with the emergence of three-dimensional technology, civilian three-dimensional equipment wills eventually going into everyone's life.

4.2 The set style of sound system, aimed audience favor and user experience

4.1the Ariel room   4.2the starry night of Ronald River

This topic selected a higher popularity of Van Gogh's paintings, the paintings of graphic elements into three-dimensional elements, select a few picture styles, the team decided to paint in accordance with the style of painting. The pre selected Japanese Yamato-e, low style (Figure 4.1 and 4.2), but after making the demo we found that other style to use for the essence of Van Gogh paintings cannot be interpreted in a proper way , mixture of the type may be lose the understanding of the original painting . Think twice about making a model map using only the elements in Van Gogh's paintings to create the application. In the sense of hearing systems, the symphony is used as the background music, which can be used to display as a background track. We refer to a lot of foreign literature such as the design psychology editor by Nelson. We consider the many user preferences and other factors, in foreign shows more than half of the tickets is selling to older customers, to delve into deep reason. we can find out that compared to the young people ,the older viewer's knowledge of reserves is relatively deeper, young people on the meaning of the painting will not understand enough . So it is necessary to increase their participation in the general presentation in another different way.
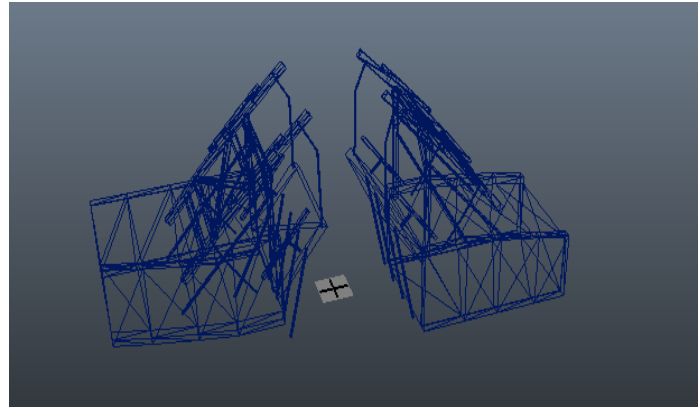
The application of interactive target to the group of the students and the people who live around the world fancy about the Van Gogh painting. If you make an application to interact, allowing users to participate into the scenes, the user can be intuitive; with the hand to control the whole work is a new experience for the majority of the audience. Key points and difficulties in the establishment of unity Van Gogh scene In determining the theme, we selected four paintings of Van Gogh's most famous paintings then chosen the element like flat leaves, Van Gogh's iconic clouds as a material,converting them to the 3d software ,making model and texture them, all this plan should be carefully pre considered in advance. In 3D software produced a 3d simple scenario (Figure 4.3, 4.4), after the draw a good map into the software called unity, we need to pay attention to the format of the file, in 3DMAX file format is divided into two version, the FBX and obj format. the format difference is FBX can save files in a form of animation and obj simply save model file attributes, it small advantage in obj file size, but if consider the best effect implement into the Van Gogh's scene is the Fbx files, because its can store the motion information which can increasing the quality of the work.

While consider that the number of the animation show is relatively limited so slow animations with soft music is a good way to attract audience favor. Understanding the history background of the paintings, the team decided to use the characteristics of the local music with long orchestral music to match the figure of the painting. Imaging that people walking into the scene then triggered in unity scene unintentionally, instantly arouse the back ground music and with the slow motion animation, so that the user attention can be stimulated.

Pre-set animation in the Van Goph scene will be interpretation in the word described in case the animation makes the whole scene performance too abrupt. Whenever open the application, the users see Van Gogh painting scene fitting the real painting , which requires programmers skillfully use camera to find the right angle, restore the essence of painting must be optimize the angle. Because Van Gogh's paintings are deformed distortion space, which gives us a trouble of the choose the virtual camera.

After process in debug several times which find out wide angle camera to meet the work requirements, in the center of the screen is clearly visible, gradually fuzzy transition to the edge, deformation of the edge of the screen is the lens language; often said insecurity, fear, etc specially imply state of mind. This intention is to restore Van Gogh's creative mood at the time.

4.3 《Bridge》 4.4《Bridge》 3D line model

4.4 Scene optimization of Van Gogh's paintings

The application of Van Gogh's paintings must be very delicate, among all the of Van Goph painting, Our teems selected paintings which have a lots of scenes including flats ,building and cloud ,etc so that we can create the virtual van gosh world easily according to this existed painting. Due to apply in the mobile platform, so the first priority issue is to optimizing the surface of the object, minimize the line and the spots on the surface, because of limited used hardware resource in the mobile platform. Excessive number of faces may influence the degree of mobile phones and smooth, in the mobile platform cannot use the huge number of polyhedral model. if taking the systems sources into consideration .weakly stimulate the system resources , so in the proceeding of production model . Control the number of curve, taking strings of using the number of vertex. Delete the unnecessary surface like the side top, bottom and ground .using drawing maps to increase the bump effect instead of using the surface line , so as to improve the efficiency of equipment operation.

4.5 interactive use of Van Gogh painting scenes

Van Gogh's application scene design reference to the famous online games, "the age of ancient" based on the unity engine development , the scene with high precision 3D model, support collision model (with the player cannot overlap). In addition, the introduction of the weather and climate games system, coupled with a high degree of simulation of real time and light, so that the player immersive feel the scene of the grand and exquisite. In the ancient centuries," you can watch the sunset, breeze cloud, in the desert scenes also may encounter a tornado across any time.

And in the van Gogh scene we can wear virtual glasses or look through the screen to see a variety of interactive elements, in the coffee shop we can see out of the window, the train speeding up and passing away, when the characters went to the location near the bed we will also set up a trigger, the window can open automatically, through simple displacement code and position, scale, rotate and other simple angle settings. The vivd motion makes the scene live up, the details also determines the quality of entirely works.

4.6 Van Gogh "s room" window animation.   **4.5 Coffee shop" lighting effects**

There are a lots of interactive object in this van Gogh scenario , such as Van Gogh room window, approached the area near the window (Figure 4.6), will be able to open the windows to see the scenery outside the starry night. Another example of the "coffee shop" (Figure 4.5) of the scene. When the character approaches the cafe, it triggers the light bulb to illuminate the entire scene. Interaction is the using the leap motion devices, with gestures to control the scene. All the operations are getting rid of the physical button such as mouse and keyboard. Through simple code set (when the x value subtraction is negative, to determine the character to the left, subtraction is a regular right away) the logic to determine to effect, mark in the bones, which can rapidly determine the gesture position and improve the accuracy, Enhance the operating handle. Scenes from the original, so the virtual navigated the whole scene is indispensable, gesture control offer users convenient and simple manipulation in the scene when their using.

5. Conclusions

Van Gogh paintings are characterized by bright colors, clear strokes, deliberately weakening the shape, with a strong decorative charm, etc. So when Van Gogh's painting works in the process of three-dimensional have encounter a lot of problems. In color reproduction, the need to pay attention to color expressing condition, under the different environment that the effect is different, color under different color temperature, the same objects in different places will have totally different color emotion display. so Furthermore adjustment of the picture color try to tone conformed to the author's intentions. Effect mechanism of paintings is retained the original painting brush effect, Brush size debugging need to be solved. Through the computer to timely adjust, in order to respect the original display directly from the paintings selected mapping for a texture map, on the one hand, saving time, on the other hand also respect of characteristics of original paintings, making as possible perfect paintings reduction. If the engine resources allow to add a normal map in the material to increase the effect of the bump.

Space, such as Van Gogh yellow house is a flat room, when showing the display is little slightly distorted, so when we production scene must apply different camera angle to regulate angle for the scene of paintings. In Van Gogh's paintings in the presence of the user can hardly see the shadow, the application of the picture can not be used to describe the picture of the picture to restore the painting. In the map. Through the whole picture of the structure of the paintings, we can see paintings is composed of a large area of color and bold strokes with large areas of color in extensive of strokes constitute each structure, so in designing the texture must according to the paintings of the prototype for a reduction of paintings. because the sense of reality, we use 3D scene to display technology to presentation Van Gogh painting which can show the audience more detail and information, specially the expression is interactive, Duo to production cycle is short, low cost, transport is convenient for a characteristic, make network 3D interactive display technology in business enterprise, showing the process of application provides good conditions. And interactive three-dimensional display technology to enhance the performance of the product image to a new height, to fierce competition market and open a broad space for the Ar art industry.

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