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Green Screen Filming Techniques Paradox Time By Applying Chroma Key Effects

Arif Abdirahman Lubis^a, Muhammad Amin^{a*}

^aStudy program Computer Engineering Politeknik LP3I Medan, Indonesia
Email: aarlub@gmail.com

Abstract

The development of technology is increasingly growing rapidly, giving rise to new innovations in technology. One innovation is the technological development of green screen technique in video editing or image can then be developed. This research focuses on keying green screen method was developed especially for the visual effects of the film. There is a range of ways to use existing tools to create mattes from green or blue screen dish. However, it is still consuming time process, and the results vary widely, especially when it comes to maintaining a small detail, such as hair and fur. This paper introduces the concept of alternative and method for maintaining edge detail the characters on the dish of a green screen, too, a number of mathematical equations connected explored. At the end of this research, the process is simplified apply these methods in a real production was also examined.

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Key-word: Virtual Guide, Non Linear Editing, Maimoon Palace

1. Introduction

The development of multimedia technology is a big role in the field of communication, business, education, and industry at the present time have been able to develop multimedia information process is dynamic and effective. The advantages of multimedia that is capable of exciting the senses and interest due to a combination of sight, sound and movement that provides clarity of information conveyed to the public. Needed a technique to make a multimedia it look better by using green screen techniques. Green screen technique has long been used in the world of a Hollywood film. Green screen is used to manipulate the background or the background of the main object. By using a green screen, the main object can be placed anywhere by manipulating a background or backdrop. Green Screen Technique is a procedure which two video images or two can be mixed. image or video forward is removed in order to reveal the image or video behind it. Because image sensors in digital cameras are sensitive to the color green, this is why the colors that are used more often in the background when compared with other colors.

Therefore, this channel contains the smallest noise and create a mask that is clean and clear. This technique is used on weather forecasting for the making blockbuster movies. The main purpose of the use of the green screen is to highlight the main object at the same time do the blocking of the background so it is easy to be edited or removed to be replaced with another image or video (Tzi, 2015). At the time of the digital era, development of multimedia technology began to evolve with the techniques used to manipulate video that gets better results. Because the camera sensor is more sensitive to green (Bryce, 1976), the green screen is used more than any other colors or more striking. However unlike the sensor camera, a movie camera to provide lighting that fits in with the two other layers of the canal R.G.B (Red.Green.Blue). Visual effects movie scenery choose a green screen or blue screen as a backdrop based on facts - facts that are needed in making the film. There are some practical path to engineering drawings green screen or blue screen.

Chroma Key is the key to the technique of mixing two or more photos or video frames together, which the color of an image or video to be deleted or made into transparent, uniting different image, or other video in the background. This technique is also

referred to as color keying, color-separation overlay, green screen and blue screen. Such technique is commonly used on news programs on TV, as presenter was giving the weather forecast, next to it there is a map image, whereas the original is a blue screen / green. So the illustrations, when the shooting, shooting an object in the background using green or blue color later in the editing process background or green or blue background is replaced with the background or other digital background.

A typical way of encoding RGB color information is to use a color space Y'CbCr. Y 'usually indicates a luma component, a blue-difference Cb, and Cr showed red-difference chroma components. Because the storage and transmission limitations, especially in the case of video signals and digital photos, and because the human visual system is more sensitive to variations in illumination of color (Livingstone, 2002), a digital signal can be optimized by devoting a wider bandwidth for component luma than Cb and Cr color component difference. However, some heavy compression schemes can cause degradation to the green / blue screen lock. There is no visual difference is felt, however, saturation compression in digital images diartefak significant results, which affect the outcome of keying green / blue screen of late. There are several types of typical subsampling available for the film and encoding digital data, such as 4: 4: 4 Y'CbCr, 4: 2: 2, etc. High-end film scanners typically use a 4: 4: 4 Y'CbCr, which means all the components have the same sample rate. One SDI (serial digital interface) links carrying 4: 2: 2 signal, another link brings 0: 2: 2, and when the two are combined they create a link 4: 4: 4 signal. Some digital cameras do not have the chroma subsampling and recording 4: 4: 4 R'G'B over dual-link HD-SDI. Many high-end digital cameras, such as Digital Betacam, DVCPRO50 / DVCPRO HD can encode two chroma components at half the sample rate of luma component with little or no visual differences (Charles, 2003). A picture contrast can be drawn quickly, which is not part of the picture that green / blue screen will not erase. A picture that does not contrast the soft usually produced as a result of plate green / blue screen with fine details, especially around the edges of characters (Mark, 2002). The result of adding these two contrasting images together create an image that is not the contrast to the high quality that will be ready for the next process. However, the question is that the picture does not have to be made carefully to extract all the points the details, such as hair and thus the creation of images that do not contrast is a time consuming process.

Nowadays, most of the VFX studio chose a linear color space (Larry, 2007) of their visual effects pipeline, one big digital compositing applications - The Foundry Nuke is also designed to work in a linear color space, which is also called a physical color space. In addition, the mathematical formula used to manipulate the image is designed to work well in a physical color space. Film scan digital data in a logarithmic color space designed to bring as much color information as possible, when a log file is converted to 10-bit linear color space to store data in the same gradual tonal and each step has the same weight. If the value range 0-1023 is remapped to a range of projects, and the conversion of 95 and 685 points on a scale of 0-1023, the pixel values below 95 represent the values of black, and above 685 is considered. Logarithmic formula is written as follows:

$$y = \log_b(x) \quad (1)$$

Based on the explanation above, the author intends to use the green screen plate as an example in the following experiment. However, the methods used in the experiment can also be applied to plate a blue screen. The following figure (Figure 1) shows how the plate looks green screen with 10-bit DPX file format in log color space to the 8-bit computer display. As an industry-standard workflow in digital visual effects, all elements in different color spaces will be transformed into a linear color space prior to manipulation. The following figure shows the 10-bit DPX files images in a linear color space after being converted into digital compositing application, and viewed on 8-bit monitors the same computer under sRGB.

The film is a work of art in the form of a series of live images rotated so as to produce an illusion of moving images which are presented as a form of entertainment. The illusion of a series of images that produce continuous motion in the form of video. Film is often referred to as a movie or a moving picture. Film is a form of modern art and popular made for business and entertainment. Making movies has now become a huge industry that is quite popular around the world, where films are always eagerly anticipated big-screen presence in cinema theaters. Various largest film industry, among others, Hollywood films, Hong Kong or Bollywood film is made in two main ways. The first is through the technique of shooting and recording through a movie camera. How this is done with the shooting images or objects. Both of them can uses traditional animation techniques. How this is done through a computer graphics animation or CGI techniques. Both can also be combined with other techniques and visual effects. Making a movie usually takes a long time and a relatively long time. Besides the film production also requires its crew and the job description of each, ranging from the director, producer, editor, wardrobe, cinematographer, visual effects, music arranger and etc.

There are several video processing software, but this reseach using Adobe Premire Pro CS4 software, which is one video processing software which is very popular and has been recognized sophistication. Facilities and video processing capabilities that exist in software ease of use so many production houses that use it.

This reseach aims to introduce alternative concepts and methods for maintaining edge detail the characters on the plate of a green screen, too, a number of mathematical equations connected explored.

2. Methodology

In the process of filming time paradox by using green screen techniques, there are several stages of the manufacture of the script, shooting and editing (Figure 2.). the first phase is making the script, the script required for the manufacture of crew selection, the search for the location and preparation of the storyboard. After finding the right location, storyboard form and the location is found, then proceed with the process of shooting and editing. In locations used for the film time this paradox is in Jalan Medan Sei Brantas, the camera used for shooting is a Nikon D5200 and a computer with a processor core specification i 5. The editing process is done using Adobe After Effects CS6 software (Figure 4) and Adobe Premiere CS6 (Figure 5)

3. Green Screen Process

The first to extract the color green on the plate green screen (Figure 6), and then bake plate to plate the background by using a mathematical equation, then, in the end, add a matte others generated from green / dish blue screen that is the same on top of one made through mathematical equations. By combining these two elements together, the objects extracted from green / blue screen dish, and a reasonable amount of detail retained in the final composition.

4. Editing video

After receiving some scenes, then the scene has given chroma key effects that turned into a transparent green color. Furthermore, the scene included with background video or images as desired. In this case, the background is entered desert background ambience (Figure 7). So that the resulting scene as if - like when you are in the desert. So is the case, when the video background is replaced with a different atmosphere as in figure 7.



Figure 7 Display after editing

5. Testing

Testing is done by running the video and see the results of these tests can be summed video goes well. Researchers found that affecting the quality of the film is a kind of computer, camera and lighting. In the process of making this film takes 4 hours for the rendering process. Therefore, the use of a computer with higher specs to reduce the processing time rendering. While lighting greatly affects the quality of green screen. Before the shooting, the light conditions are measured using the meter so that the locking lighting color using chroma key becomes easier.

Conclusion

In filmmaking time paradox by using green screen techniques can change the background scene and produce a movie as though the background looks like real. The process of making the film was influenced by the specifications of the computer, the camera and lighting.

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