Research on Application of Computer Image Processing Technology in Art Creation

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Abstract. In just 20 years, digital products have changed from enviable toys to necessities in the current society. The rapid development of computer technology and the sharp rise of living standards have injected infinite possibilities into people's lives. Everyone has the conditions to create images, just take out our usual mobile phone, ordinary people instantly become artists, with their own aesthetic concept and imagination to open the door of art creation. With the help of computer intelligence technology, the imagination can show off, and the new art creation methods emerge in endlessly. This paper discusses the application of computer image processing technology in art creation.

Keywords: Computer, Image Processing, Art creation

1. Introduction

Science, technology and art have always been an important yardstick to measure the development of human society. Science and technology represent the upper limit of human understanding, utilization and transformation of nature, while art represents the highest level of human understanding, harmony and yearning for society [1]. In today's technological conditions, new technologies, new materials, new ideas and so on continue to emerge, some even a flash in the pan is quickly iterated, everything is undergoing earth-shaking changes. Technology and art collide in this state, and the value is prominent in the practice of fusion. Computer image processing technology is a technological revolution carried out by art as a tool and means. For artists, it excavates personal personality and inner emotion to a greater extent, and for ordinary people. It greatly reduces the threshold of art, popularizes the concept of art, and organizes the aesthetic sense and will of human beings. Computer technology has not stopped, and between it and art, many bold and rational stories unfold. The application of computer image processing technology in art creation not only brings more unknown gospel to art practitioners, but also provides impromptu art creation for the general public [2]. It has become a popular new creative technique and has a wide and far-reaching impact on art creation.
2. An overview of the fusion of computer image processing technology and art creation

2.1. Concept

Computer image processing technology started not very early, so far only less than 40 years of development. A new technology that emerged in the late 1980s, the computer technology of various processing of graphics and images, its obvious feature is that people can according to needs, hobbies, understanding of all kinds of pictures, including art creation, dressing, this dressing is selective and free, so the processing of the same work can have an infinite variety of processing combinations. This idea of different people, different people and wisdom is the spirit of art for thousands of years [3]. After many years of research, many computers have become an indispensable means in scientific research and technical application, and have been widely used in many fields.

2.2. History

Different from the era of computer image processing, in recent years, computer digital technology has a great impact on the development of modern life, for the metaphysical art of life. It is natural that with the change of the times, profound changes and changes take place. The progress of the times urges the progress of art, but also contains the requirements and support for the new art. Therefore, artistic activity is the reaction of the phenomenon of the times. In the fundamental sense, artistic change is closely related to the change or progress of the times. Nowadays, people's lives are full of digital media, which all the time affect people's technology and ideas to bring human beings and the world into a multi-dimensional creative new stage. The intervention of modern science and technology does not make art creation feel embarrassed, but makes traditional art suddenly open a door to a wider world [4-5]. The combination and mutual penetration of the two enrich the style of art creation and expand the new form of creation. As shown in figure 1, different styles of art can be synthesized by computer image processing technology to form a unique creative technique.

![Image](image_url)

**Figure 1.** Examples of diverse artistic creation techniques under computer image processing.

2.3. Advantages

In many links, modern technology has replaced the traditional, digital media in people's lives a large number of applications. The techniques and methods of painting have been more chosen and greatly improved, which has a great influence on the expectation of modern art creation. At the same time, the artist's creative ideas have also changed [6]. The upgrade of the well-known painting software is accelerated, the defects are less and less, the function is more and more powerful, and the interface is more and more humanized, which can provide more special effects for the artist's works. With the
development of computer software, computer image processing technology enables artists to easily achieve very complex synthetic effects, and can reduce the error between the effect in the process of plate making and the effect after printing to the minimum. Computer retention makes it easy to change any graphic image or whole image [7]. In addition, the computer image processing technology to the work color collocation, the construction, the tendency to try different methods, obtains the different variety work effect to carry on the contrast, is more advantageous to select the final art creation work. Moreover, computer image processing technology has proposed more pen categories for art creation, and there are many strokes for creators to choose from at will. Figure 2 is a combination of hand-drawn and computer image processing.

![Figure 2. Artistic creation combined with computer image processing.](image)

3. Application of computer image processing technology in art creation

3.1. Pretreatment of art works

Many works of art need to be pretreated in the stage of image or semi-finished product in order to improve their various characters in order to achieve better artistic effect. Using computer image processing technology, it can improve the display effect, improve the resolution of the work, repair and decorate the defective parts, mistakes and other unsatisfactory places, or make old, fuzzy, cut and altered works according to the needs of artistic expression, so as to enhance the artistic effect of the work.

3.2. Improvement of image plane vision

Art works not only provide visual and psychological beauty to the appreciator, but also a form in which the author expresses himself through art works. The more the author embodies his own thoughts in art creation, the more he can stimulate the audience's spiritual feelings and arouse the collective resonance of the similar life experience [8]. With the support of many kinds of software, computer image processing technology can easily adjust the image of art works, change the contrast, hue, saturation and so on according to the need, provide a wider artistic space and means of expressing oneself for art creators, make art creation closer to the author himself, arouse further thinking of the viewer, and give more visual impact, thus leading to the attention to outlook on life and values, and reflect the richer value of art works.

3.3. Enhanced stereo modeling
The application of computer image processing technology in art creation is the most different way to break the tradition is to derive a three-dimensional thinking to process the plane image, so that the art works back to the viewer side also has an indispensable position. At the same time, the three-dimensional thinking considers the setting, creative tools, materials, environmental and so on, and combines with the works of art to form a road of combining artistry with realism, and makes the works perfect by repeated simulation through image processing technology [9].

4. The significance and value of computer image processing technology in art creation

4.1. It greatly enriches the material source of art creation

All the material of art comes from life, and so does art creation. For artists, computers can provide them with rich imagination and memory of life, arouse artists' fragmented artistic ideas, and play a role in assisting their combination of expression. Image processing technology does not create material out of thin air, but a life lens in the artist's mind can be combined and reprocessed with the help of image processing technology, thus creating an endless source of material.

4.2. It greatly enriches the artistic expression means of art creation

In this era of art creation, solidified and monotonous art forms are far from satisfying the desire and pursuit of new things. Art creation often combines different artistic forms and means. The emergence of computer image processing technology has changed the traditional painting process, not only for artists to save time for field materials and sketches, but also to create works repeatedly polished and modified, in order to more fit their own ideas. The vividness and impact of collage and synthetic effect provide many conveniences and speed in effect, and provide the artist with the freedom to try different ways and methods [10]. Figure 3 is a comparison of art works before and after the application of computer image processing technology.

Figure 3. Contrast drawings of fine arts produced by computer image processing technology respectively.
5. Conclusion

Computer image processing technology is a new thing, and is in a very rapid stage of development, while using it to optimize art creation should still be based on the author's own life experience, artistic imagination and strong rendering ability. On the road of art creation, it is the magic weapon of art creation to integrate new science and technology, actively study and actively apply, and give play to the advantages of digital age.

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