Influence of Artificial Intelligence Technology on Animation Creation

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Abstract. The advent of the era of artificial intelligence has brought unprecedentedly technological changes and breakthroughs to animation creation, which makes animation art creation gradually move towards the field of intelligence, and avoid the cumbersome and intensive work mode, thereby making the creation focus on the creative innovation. This paper deeply discusses the relationship between artificial intelligence and animation creation, and clarifies the advantages of artificial intelligence in improving the efficiency of animation creation. At the same time, it also analyses that the root of animation creation in this period is still human nature, so the creator should create animation based on human nature itself.

Keywords: Artificial Intelligence; Animation Creation; animation technology

1. Introduction

1.1. The Development of Animation in the Age of Artificial Intelligence

Since the 1956 meeting in Dartmouth, USA, scientists such as McCarthy have formally proposed the concept of “Artificial Intelligence (AI)”, which is generally defined as “the study of the laws of human intelligence activities, the construction of artificial systems with certain intelligence, and the study of how to apply the software and hardware of computers to simulate the basic theories, methods and techniques of certain intelligent behaviors of human beings”, The performance and application of artificial intelligence in animation creation is amazing. A series of performances and applications have a tendency to catch up with human thinking. Even in some creations, we have to deconstruct and subvert human vision and thinking. We have to start emphasizing artificial intelligence animation. Current animation concept can't explain present animation category of artificial intelligence creation. We have to ponder on the animation created by artificial intelligence, which can be defined as animation art.

From the long history of animation development, it can be concluded that: scientific and technological changes contribute to promoting the development of animation. The Persistence of Vision with Regard to Moving Objects, published by Peter Mark Roget in 1824, laid the foundation for animation theory. The invention of the camera and the “lattice shooting method[1]” even further promoted the animation forward. Ecole Emile Cohl filmed the animated film Fantasmagorie with a negative film using a camera. J. Stuart Blackton used the principle of a lattice shooting method to
make the animation named Humorous Phases of Funny Faces. Earl Hurd invented the Celluloid layered drawing technology to promote the industrial production of animation. The success of Steamboat Willie has led the animation to the sound world, and the appearance of Flowers and Trees has opened a colored door for the animated world. “K. Knowlton of Bell Laboratories in 1964 began experimenting with computer technology to make cartoons, and since then the animation industry has entered the era of computer technology[2]”. The rapid development of animation has always been on the very basis of computer technology into the era of digital animation, the emergence of 3D animation, virtual animation. Nowadays, artificial intelligence has emerged to generate animations, such as “the Artificial Intelligence Allen Institute and researchers at various universities who have developed the artificial intelligence animation model ‘CRAFT’ (Composition Retrieval and Fusion Network), the basic operation of using AI to generate cartoons through text has been realized, and a small fragment of the animated ‘The Flintstones’ has been successfully synthesized [3]”. AI solves most of the repetitive works, freeing creators from the heavy, repeatedly modified effort of animated frame frequencies, for instance, “Adobe's announcement that Adobe Creative Cloud has joined the Character Animation of Adobe Sensei Artificial intelligence technology, and the puppet lip can be synchronized with the sound in real-time [4]”. Thus, the development of animation closely follows the pace of technological innovation.

The word “animation” comes from the Latin root “Animä”, which refers to “soul”. “Animate” is the meaning of “giving life”, and animation is different from other movies. It is a creative activity, the creators of which inject spiritual emotion into animation so as to create the art of life movement [5].” Although artificial intelligence animation is based on the use of algorithms and data simulation animation, simplifying the creative process, the algorithm itself needs to be completed by artists and scientists, and the original intention is still the result of human participation. It is necessary for people to proofread the rationality and aesthetics of this animation, that is to say, artificial intelligence animation is a combination of technology and art of the artistic expression, which is the use of artificial intelligence technology to express the creator's spiritual feelings, cannot be separated from the “human” element. In the future, with the further development of artificial intelligence, AI animation will be a form of artistic expression of human-machine unity.

2. The Animation Creation in the Intelligent Era Should Follow the “People-oriented” Concept

Advanced science and technology provides infinite possibilities for animation creation, however, when the aura of technology fades, the connotation of animation works itself is still the priority. The creation of animation in the age of artificial intelligence will be guided by the direction of intelligence, the artistic creativity of the works themselves will be paid more attention, and the core of animation creation in the intelligent era is still “people”.

2.1. Man is the Creative Subject in the Age of Intelligence

Artificial intelligence has been in poetry, painting, animation, music and other fields of independent “creation”. Artistic creation is the expression of the initiative of human emotion, and “man” is the main body of artistic creation. ‘Plato, Aristotle’s ‘imitation’ says that art comes from the imitation of nature; Kant, Croce's 'performance-said' that art comes from people's subjective spirit, emotion, is ‘self-awareness of the embodiment of ‘the impulse of the body of life’; Cleve Bell's 'meaningful form' attaches marvelous significance to the aesthetic emotion of human being as the subject; The society proposed by Danto and Becker is a necessary condition for the emergence of art[6]”.

This shows that “people in the process of artistic creation and appreciation of the subjectivity of the affirmation and emphasis and the establishment of their own subjective status began to consciously express self-awareness, have the impulse to express themselves, which is the emergence of the subject consciousness[7].” Artificial intelligence itself is the creation of human beings, produced by the design of human algorithms, in other words, “people” or the creative subject in the intelligent era in the final analysis. With the deepening of the combination of technology and art, the singularity of the step approaching, the future of artificial energy art creative world will be unprecedented “Singularity Art”.

2
2.1.1. **Animation creation is the realization of the creator's self-worth.** First of all, for animation creators, “creativity” is the key to animation artists. Animation creation is the expression of people's self-emotion and the realization of their own value, is the creator's expression of the unique experience, emotion and concept of creative sexual behaviour, and is the display of their own aesthetic way. Animation works have thus become the creative entity expression of the creator. Although AI is involved in all aspects of animation creation, whether it is the early script storyline settings, for example, “Disney research of natural language text in automatic animation technology can be analyzed according to the script, then automatically generating basic story sub-mirror and animation[8]”, or the middle of the characters, scene animation painting coloring all appear AI creation, like “China Animation technology company Meow Technology using artificial intelligence technology to fill the color. Automatically color, frame interpolation, making a set of animations only takes 2. 5 hours, the efficiency increased by 2000 times [9]”. However, current development of artificial intelligence is still in the early stages, which cannot get rid of human self-creation. In the end, it is necessary to carry on the operation input with the person the moment the subject consciousness is vague and the works of art “re-reproduction” lacks the conscious creation, which is not the work of art. Only if the artist actively adopts artificial intelligence technology to participate in the animation creation link, can the work with the artist's initiative be the work of art, which is the realization of the artist's self-worth.

2.1.2. **Animation creation is the spiritual exchange between the subject and the audience.** The main body and aesthetic audience of animation creation are still human beings. Nowadays, artificial intelligence is supported by data and algorithms, which cannot constitute an independent individual of life, exchange interaction or express self-desire. Meanwhile, works of art condense the creator's desire to communicate the soul, which is the key to explain why a work is moving. Thus, spiritual communication gives human beings the motivation to create art, and this kind of motive force is the vitality of works of art. There is no one participating in the loss the life of animated art in Animation works.

2.2. **Man is the Creator of Animated Content and Form**

2.2.1. **The content theme of animation art is always “people”**. From the creative content, artificial intelligence animation creation is more of the thinking of human nature. Ice and Snow Wonderland conveys the idea that human understanding of love and hope is able to touch the deepest touch of people's hearts, bringing emotional resonance. Crazy Animal City, through the anthropomorphic form of the animation plot, shows people that these animated art content all reflect the theme of “people.” Although artificial intelligence can also simulate animation works through algorithms, the machine does not have life and death and reproduction, also cannot understand the theme of human nature-life and love in that there is a lack of the machine creator and the common sense of audience, so it cannot from the human psychological point of view and thinking to carry out the script and literary creation [10]”. This is also the lack of artificial intelligence creation, so the creation of animation is the injection of emotional spirit, and any kind of machine is difficult to replace.

2.2.2. **The form of animation is created by man.** The form of animation originates from the creation of art, which derives from human beings itself. Animation form is to some extent is the expansion of real film and television art, which can put aside the limitations of real film and television, being people's dissatisfied expression of the existing art form and the embodiment of creativity. “The form of works of art is technically composed of two formal factors, the inner structure and the explicit artistic language[11]”. Animation art remains a comprehensive art type, the integration of painting music and many other art categories. A very important factor in evaluating the form of animation style is the lens and lens group connection: The lens has the content of the picture-the external artistic voice; the lens group has the rhythm-the inner institution. Animation works are the director in the
“limited time and space” with the aesthetic habits of people to create, express the common feelings of people according to their own understanding of the script.

3. Artificial Intelligence Promoting the New Leap of Animation Development

3.1. Labour Release Shifts the Focus of Animation Creation to the Creation Itself

Animation creation in the era of artificial intelligence has greatly released the labor force, so that animation art creation gradually move towards the field of intelligence, avoiding the tedious and intensive mode of work, thereby leaving animation creative activities emphasize more creative innovation links. “Microsoft's Persona project is dedicated to generating anthropomorphic animated characters that can engage in natural voice conversations with users by using anthropomorphic dialogue mechanisms that match the actions of the characters when they speak[12]”. It is also proposed by the Yoshua Bengio team with the build-type countermeasure network(Generative Adversarial Networks, referred to as GAN) which can be perfectly customized to the animation people who are eager to set up, and China's animation company Xuan Guan Technology, with the help of AI cluster system, input the basic requirements, the computer will be given the logic to achieve automatic calculation and production of the basic animation. Artificial intelligence solves the tedious process of animation production, leaving creators more time to conceive the work itself.

3.2. New Trend of Animation Creation Aesthetics in the Age of Artificial Intelligence

Animation aesthetics has been changing over time. Early animation in the content and form of straightforward and simple performance, such as Zenas Winsor McCay's masterpiece Gertie the Dinosaur. With the development of science and technology and audience appreciation of taste and other factors of change, the audience is no longer limited to simple plot and structure, whereas they began to pursue audio-visual stimulation, beautiful picture, sound shock, such as Kung Fu Panda and other works. The being of artificial intelligence era results from the fact that animation creation provides a broader space. In what form should AI animation be presented in the future? What changes will be brought about by the aesthetic concept of the audience? These questions are the ones creators should think about. Animation creation in the AI era will lead to the evolution of popular aesthetic concept to a certain extent. The creators should grasp the new style of the times and create excellent animated works in line with the times. Animation art comes from life, which is also above life. Animation creators should create animation works belonging to this era based on the background of realistic environment, reflecting the spirit of the times.

3.3. New Trend of Animation Creation Aesthetics in the Age of Artificial Intelligence

Nowadays, many fields are closely connected with science and technology, and it has become unrealistic to abandon science and technology to talk about their own industries. People can use artificial intelligence to show their creativity and express their feelings. Artists try to use artificial intelligence as a means of creation. New tools, new technologies, new methods and new thinking in the intelligent age provide unprecedented possibilities and limitless boundaries for the exploration and development of animation art creation. “Animation creators should use deep learning techniques as a new animation software to learn, that is, using these tools for original artistic creation, such as smart photographers can also be adjusted through the technical parameters of the machine to complete the original artistic creation in general[13]”. The future development of animation technology, often requires creators to master a wide range of knowledge, independent completion of a variety of work, in the creation of a sense of creativity at the same time understand the flexible use of technology comprehensive development. Artificial intelligence can provide creators with precise tools. Artists use the new tools to quickly pass on the ideology and spiritual outlook to the audience, to be recognized and favored by the audience, in order to truly reflect the social value of the creator.

4. Conclusion
Technology is the crystallization of human rational wisdom, creation being the reappearance of human emotional perception. The growing level of artificial intelligence technology in the future has allowed animation creators to liberate themselves from repetitive work, but it is also a constant reminder of the role of animation creators in the intelligent age—the exporter of inspiration. In this sense, artificial intelligence will be a powerful creative tool for animation creators, and it is difficult to replace people's aesthetic emotion and rational thinking activities. In the art of animation creation, technology is the approach, animation works is the ultimate goal. The linkage between technology and animation art can achieve the continuous progress of animation creation.

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