

Research on the application of artificial intelligence generated AI technology in new media art

Caixian Ye ^{1 a}, Tsenguun Ganbat ^{1, b}, Lijun Xu ^{2, *}

¹ CITI University, Ulaanbaatar, Mongolia

² Guangdong Lingnan Vocational and Technical College

* Corresponding author: 1274431653@qq.com, ^a35898431@qq.com,
^btsenguun.ganbat@citi.edu.mn

Abstract. With the rapid development of information society and computer science, new media art has not made a qualitative leap in the past decade. The reason is that in big data and machine learning, the rapid development of artificial intelligence technology has brought computer science up to a higher level, while art is still stuck in aesthetics, acoustics, vision, psychology and other aspects, lack of logic, intelligence and integration. Therefore, the new media art needs the support of the computer technology, especially the new technology. In the design stage of new media art, technologies such as artificial intelligence, machine learning and big data mining are integrated to improve the molding speed of new media art through mathematical modeling. Through machine learning, quickly understand user experience and user needs, further optimize new media art works, use artificial intelligence AI technology to simulate new media art, and simulate the whole process of user experience and interaction is the main content of this paper. This makes new media art become a typical application in the field of AICG (artificial intelligence production content). Generative AI will greatly reduce the marginal cost of creation and knowledge work, greatly improve labor productivity and economic value, and realize the generation of new media art original content at one tenth of the cost and thousands times production speed.

Keywords: New media art, Computer science and technology, artificial intelligence, generative AI technology.

1. Characteristics of the new media art

New media art is a relatively loose and not clearly defined concept category, which includes performance, installation, sculpture, and Conceptual Art. In the context of increasingly surrounding film and television, new media art emerged in the mid-20th century. With the increase of applicable technologies, new media art emerges and reflects innovations in film, computers, robotics and even biotechnology. Due to the recent emergence of Open AI and other application technologies, the user experience of new media art will be more efficient, intelligent and convenient. It may be presented to the audience anytime and anywhere, which is the new media art form of user experience. As shown in Figure 1.



Figure 1. User experience type of new media art works

1.1. characteristics on dependent of computer technology in new media art

New media art needs to bring forth the new on the basis of predecessors, integrate more design and scientific concepts, and increase the introduction of new computer technology, mainly big data technology, machine learning and artificial intelligence technology, so as to make new media art more in line with the development In line with The Times. A complex new media art often requires talents from all aspects to spend a lot of time and adopt various information technologies, because of its time and cost, and is not able to be popularized.

In the near future, the content platform will use ChatGPT tools to generate a large number of texts, pictures, video content, to reduce the cost of original content. U.S. content platform, BuzzFeed, claims will plan to use OpenAI to help create personalized content.

In terms of entertainment media content production, the most common application scenario of generative AI at the current stage is the auxiliary production of entertainment media content. To replace the professional mechanical labor after the creation of text writing or error correction, text generation speech, intelligent image editing, intelligent video editing. And at the same time, to meet the entertainment needs of users or provide creative inspiration through content generation. The development of computer science will make the new media art more dependent on modern science and technology, especially the new computer technology.

1.2. Cultural characteristics of the new media art

New media art creates a systematic form that is often considered as one of the contemporary art. Computer technicians and artists have rich imagination and positive thinking ability in the field of art aesthetics, life application and games, thus changing the traditional forms of artistic expression. New media art is rooted in the network platform of human beings, and it has a deep sense of democracy. This expression technology is simpler and more accessible. New media art inspiration has a lot of imagination of the future life, there are a lot of real-life scenes, there are a lot of artists 'soul expression, no matter what the source of inspiration is the artist's subject and creation. New media art shows the current state of people's survival and their expectation for the future life. It is an art form displayed in science fiction or in a profound way through computer and other technologies. Therefore, new media art is also a kind of art derived from life but higher than life.

1.3. Automatic generation characteristics of the future of new media art

AIGC is the content generated by artificial intelligence. With the landing of a large number of applications, AI generated pictures, text, audio and even video and other content has gradually entered People's daily life. The further improvement of data and computing power will bring new media art works with stronger generating effect. AIGC can generate personalized customized content according

to user experience and personal needs, and the content can reach the level of professional content producers and has unique and novel creativity. Generative AI is becoming not only faster and cheaper, but in some cases better than that created by humans. Generative AI should unlock better, faster, and cheaper creations in a wide range of end markets. Generative AI can increase their efficiency and creativity by at least 20%, not only become faster and more efficient, but also more capable than before. So generative AI has the potential to generate trillions of dollars in economic value. New media art with the support of the above technologies, the automatic generation of works will be a breakthrough, but also a feature of new media.

2. The specific research method of generative AI technology in the new media art

In terms of the integration of computer technology and art design, digital media art, as a branch of new media art, has a certain research scale and related achievements, while new media art pays more attention to the experience and practicality of the public. Therefore, machine learning, big data technology, and artificial intelligence technology are the key technologies introduced in this paper. The specific research methods are described as follows:

2.1. Use scientific methods

Using big data of data mining and data analysis method for data collection, make full use of computer technology can promote the reform and innovation of new media art, perfect fusion of virtual and real art elements, create a new art form of real life, bring different visual experience and aesthetic feeling, this is the traditional art design. In addition to the visual enjoyment, the public's needs are also changing. We hope that the more intelligent modern new media art can realize the intelligent interaction and practical experience. For the better, more in-depth research requires an effective combination of art science and computer science. Use big data automation data collection tools to conduct external data collection and internal data mining, analyze the development trend of new media art, predict the future art trend, clean up and process the art map under the background of new media; use big data cleaning technology to quickly collect, process, store and analyze various art data, discover new art knowledge, create new value, and improve the performance ability of new media art. Through database, business system logs, Internet applications, container logs, operating system logs and network equipment logs, data collection, cleaning and storage operations, and using big data, data mining and data analysis methods, to obtain the data collection model. As shown in Figure 2.

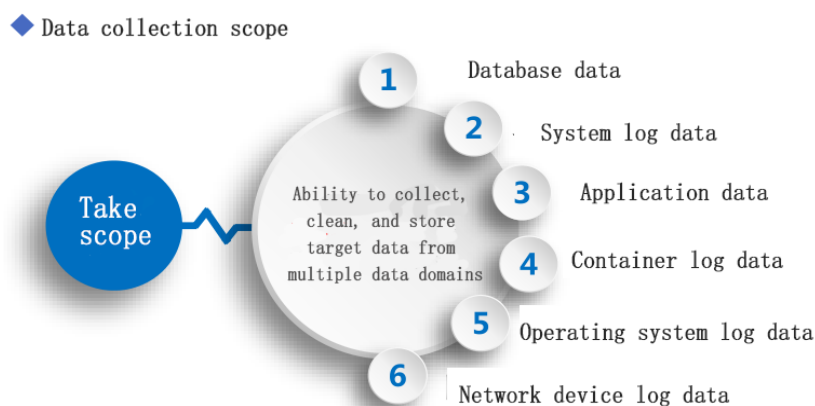


Figure 2. Scope of data collection

Using machine learning and AI generation methods to conduct new media art design. Machine learning is used to analyze the interest points, practicability, convenience and effectiveness of new media art, find users' concerns, and then summarize them through inductive reasoning and apply them to actual needs. The basic elements of new media art are comprehensively analyzed, and the

characteristics of new media art are well summarized. In the future, with the support of new application generative AI, the demand information of corresponding users can be quickly and automatically obtained and vividly transmitted to users in the form of new media art. Through demonstration and analysis methods, we discuss the main reasons and development trends of new media art changes, and summarize the interesting development of new media art in the current multidisciplinary literature, so as to provide more valuable reference for the development of art forms in the new media era. Machine learning plays a very important role in the research of artificial intelligence. An intelligent system with learning ability has been applied to all aspects of artificial intelligence, especially in the aspect of knowledge acquisition and analysis, it has surpassed ordinary people, and the processing speed is beyond human beings. For example, in drawing, language, video and other and other aspects of the collection processing, through machine fast learning, intelligent generation chart. As shown in Figure 3.

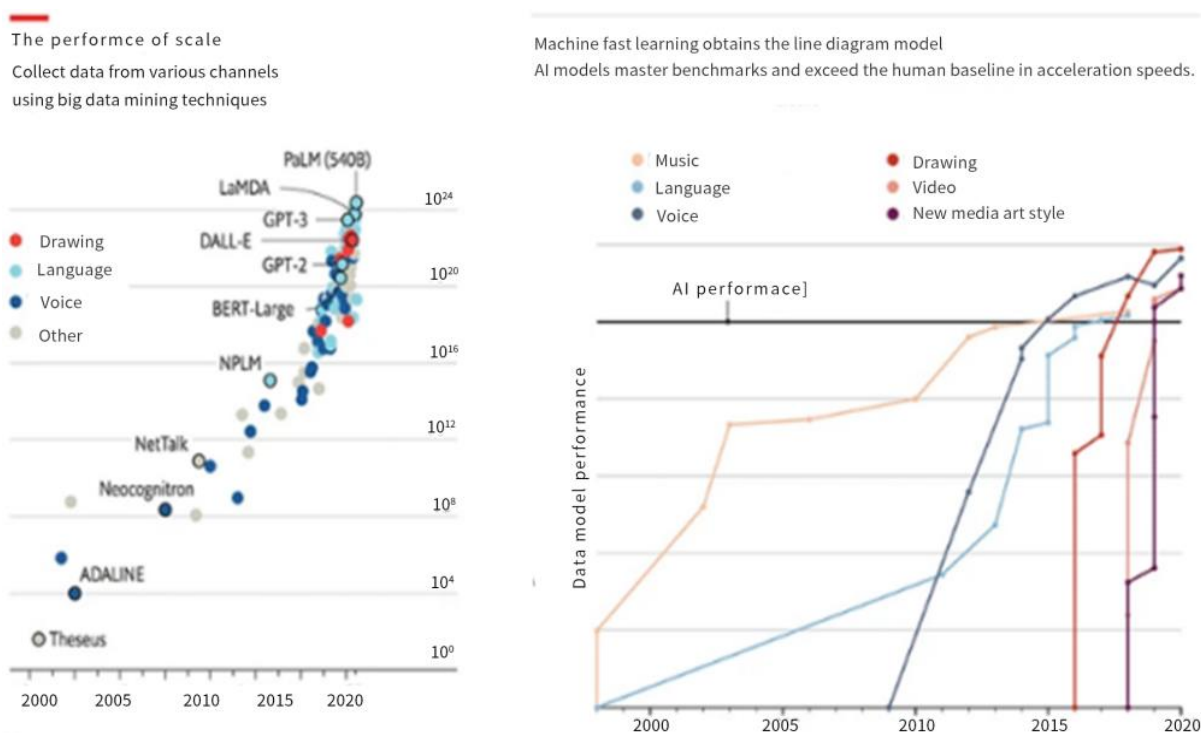


Figure 3. Emotional design model

2.2. Use technical advantages and interdisciplinary characteristics to integrate thoughts and emotions into art design

The development of information technology has created a new form of digital art design language for modern art design, and provided more development space for designers to make artistic creation. Using advanced computer technology, we can perfectly integrate virtual art elements and real art elements, create new art forms beyond the real life, and bring different visual experience and aesthetic feeling to people, which is incomparable to traditional art design. Modern new media art is not only the expression of aesthetics, acoustics and vision, but also the cross-sectional application of computer science and art, as well as psychology, sociology, life engineering and other disciplines. The original demand and innovation of new media art are very important. The pursuit of art is very different, with different styles and characteristics. New media art is higher than general art, because new media art pursues user sense of use not only visual beauty or auditory enjoyment, but also more intelligent interaction with users. Therefore, through the use of big data technology and artificial intelligence technology of new computer technology. People pay more and more attention to the application of information technology, people's interaction, learning process and use experience.

In this rapidly developing era, people begin to pursue a dynamic, interesting, material and spiritual and prosperous way of life after meeting the requirements of their material needs. Emotional design is put forward in the context of such an era that art works need to show the basic emotions of human beings, and emotion itself is a kind of energy. As long as the artist uses it well, it can make the work more infectious and better communicate with the audience. By designing a variety of new media art works, people are either excited or sad, or happy or afraid of emotions. Artists play the role of emotional drive and monitoring, thus guiding people's cognition, behavior and judgment. The computer technology team needs to understand the artist's design concept, combine big data technology with artificial intelligence push technology, and use computer programming and other technologies to produce new media works consistent with the artist's design concept.

Art design needs to cater to users' use feelings, and use big data technology to collect a large amount of user information, behavior habits and aesthetic feelings. Through big data mining information and machine learning such as users' favorite usage and emotion, combined with artificial intelligence technology, collect the main key information to generate art atlas or mathematical models, recommend them to artists, and then the artists design the products that users like. In this way, artists have artistic references and materials in the design process, saving time to avoid the exhaustion of inspiration. In this way, the artist not only integrates his own emotional experience and innovative thinking into the design works through his own observation and perception of life, but also shows the common people's thinking of the audience and the aesthetic appreciation of the public in the works, giving the soul to the work.

3. How does the generative AI technology work on the new media art

3.1. Generate a new media art model

From text to Images to voice Speech synthesis, and finally video and 3D model building, they can open up large creative markets such as movies, games, virtual reality, architecture and physical product design. The entire world of art history and popular culture is coded into these large models, which will allow anyone to casually explore subjects and styles that might have taken a lifetime to master before. It can also involve Gaming, Media / Advertising, Design digital and physical product prototype is a labor-intensive iterative process, and generative AI to make high-fidelity renderings based on rough sketches and hints. In terms of user experience, social media and digital communities have suggested that there are any new ways to express themselves by using generative tools. As ChatGPT new applications such as learned like human social network search and creation, it will create new social experience, these new technology applied in new media, art using the material results is easy to draw some new media art draft, then use generative AI technology such as computer science is easy to generate new media art model.

3.2. Generative AI to reorganize the new media art process according to user experience

We found in the art and design stage, often time-consuming, single creativity, human consumption, if through computer science big data collection and artificial intelligence technology, machine learning and generative AI technology can automatically generate according to product demand sample legend or activity plan, for enterprises and institutions in the new media operation improve work efficiency, save money, reduce cost, increase profits. Once the computer technology and art deep fusion, will open up a new world for modern art design, not only improve the level of art design, also brings people more different aesthetic feeling, improve the work efficiency of art design, at the same time according to the different user's individual feelings or need, create personalized new media art.

The data collection tools of big data are used to conduct external data collection and internal data mining, analyze the development trend of new media art, predict the future art trend, clean up and process the art map under the background of new media; use big data mining technology to quickly collect, process, store and analyze various art data, discover new art knowledge, create new value,

and improve the performance ability of new media art. The integration of information technology and art led to the rapid growth of art data, data has become the basis of art resources, and through the art elements of text, graphics, film and television classification of production, circulation, operation mechanism, applied to modern new media art design, generate art map and model for designers to use generative AI restructuring carrier, build particle art knowledge figure, combined with psychology, sociology, various elements classification, intelligent adapt to color, composition, level and user portrait analysis.

Through the research of artistic thinking, language recognition, image recognition, natural language processing, video data and so on, the consciousness and thinking of the information process simulation can produce new thinking and new forms for the intelligent new media art. This process is mainly based on user data, unifying text, pictures, video and dynamic effects, using big data collection technology to conduct internal and external mining of these data, and then using new technology to generate AI reorganization, so as to quickly and efficiently produce AI art models that meet the needs of users. The new media team uses computer programs to produce interactive, interesting and practical works of new media art. As shown in Figure 4.

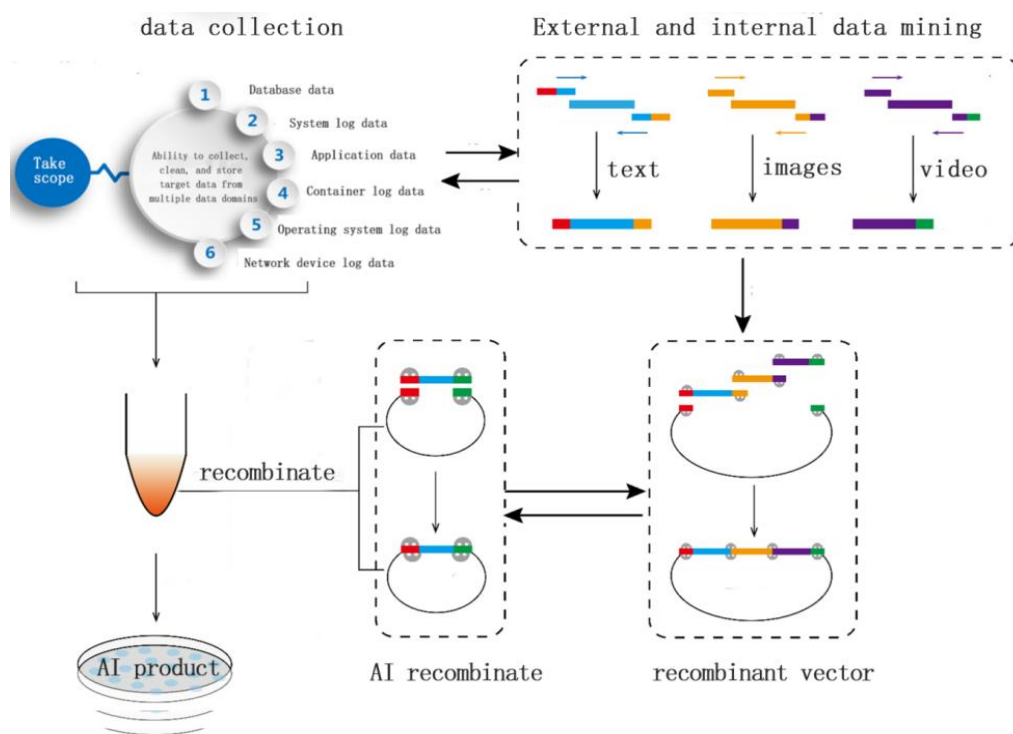


Figure 4. Generative AI recombination process

4. brief summary

Computer technology from the beginning of art design AIDS to automated generation tools, it can help us to break the limits of art. Therefore, we need to further innovate to provide more convenience for users; generate automatic algorithm model of new media art, inspire artists, and help ordinary enterprises to develop new media works they want to realize through the model. This process, of course, will have a lot of detailed work, including demand analysis, feasibility report, network information technology, cutting-edge computer technology, computer application of choice, etc., these all need strong comprehensive team to complete, with the improvement of computer science, using generative AI application technology, can make new media art output accurate and efficient, cut spending, reduce costs, improve returns. Lay the foundation for the popularization of new media art.

New media art uses computer technology to establish an interactive environment, through the use of multi-sensory, multi-channel, multi-dimensional intelligent human-computer interaction, unified

interactive plot and entertainment art. By adopting intelligent interaction channels, devices, and interaction technologies, such as voice, gestures, and images, users can naturally communicate and collaborate with multiple characters through multiple channels. The social state and cultural atmosphere of the new media era will also determine the trend of technological development. We should optimize and integrate creative elements, make good use of the power of science and technology, combine technology with art, and promote human progress and social development.

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