Role of Digital Image Processing in Image Art under the Background of Big Data

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Abstract. With the development of society, digital image, the product of the development of digital technology, is more and more used in multimedia image art. With the rapid development of science and technology, in the 21st century, the use of digital image in art works has been very popular, showing a blowout trend. Digital technology is integrated into image art in a way of mutual integration. How to make digital image play a very good auxiliary role in art works? It makes the finishing point, but it doesn't make the works dazzle and lose one thing or another. The purpose of this paper is to explore the role of digital image processing in the image art under the background of big data, so as to combine the Internet of things application technology and update the existing mode of art performance. In this paper, we will use the research method of specific analysis to compare the data and come to a conclusion. The research results show that image communication plays an important role in promoting the spread of economy, culture and daily life. In the process of image communication, creativity is essential. In the current industrial development, creative industry, as a new industrial form, can organically combine with other industries, and effectively promote the rise and development of other industries.

Keywords: Big Data, Digital Image, Image Art, Creativity Role

1. Introduction
Facing the continuous development of science and technology, art, the gradual broadening of public vision and the focus on the spiritual and cultural world, the aesthetic needs and height of the public have changed. There is no denying that the import of digital image plays a decisive role in the presentation of image art. In this way, there is also a biased misunderstanding in the application of digital image, that is, around the impact of audio-visual senses, the application of digital image in image performance is improved infinitely. This bias has led to the unreasonable application of digital image, the homogeneity of image content, the abuse of image technology, the lack of image connotation and other issues have gradually emerged. Visual impact has replaced performance observation and communication, ignoring the visual aesthetic and experience needs of the audience. Therefore, combined with big data technology, explore the correct use of digital image processing technology, so that it can become a better viewing bridge between the audience and image art.

With the promotion of digital generation, storage and production, digital technology realizes
information visualization, and digital image is one of the most effective means[1-2]. In the current digital era, the domestic digital image art is developing rapidly, has become all pervasive, become an important way for people to perceive the world, access to information, digital image is also more and more used in all walks of life[3]. According to the current research status, the development history of digital image art is relatively short. There is still a wide range of research areas. Although with the innovation of digital technology, its development has been quite rapid, but we also see that at present, China is only relatively strong in technology tracking ability, new media technology is no less than foreign countries, and there are still deficiencies in planning concept, innovation awareness and fine product accumulation[4-5]. In addition, most of the domestic experts and scholars are too concerned about the planning of digital image art, ignoring the unity of content and form, and the role of digital image in cross-cultural communication can not be reflected[6-7]. Therefore, it is of great significance to study the practical application of digital image art, which is also of certain value to establish and perfect the new media program planning discipline, construct the new media program evaluation system and enrich the connotation of new media art[8-9].

By studying the application of digital image in art works, this paper explores the new breakthrough compared with traditional art works, the creative way and greater artistic value for image art[10]. The theater art added by digital image has changed the narrative structure of single line in the past, emphasizing the construction of multi-media theater with multiple and interactive performances, and analyzing the rationality of its application from the perspective of vision through relevant cases at home and abroad[11-12]. At the same time, it discusses the moral and connotation of the image art works, so as to enrich the expression of the content of the works in a real sense. Not only will the visual effect of film and television be more colorful, but also let the audience get the inner resonance and the satisfaction of interactive experience[13-14].

2. Method

2.1 Core Concepts

(1) Big data

Big data is a new IT industry term. It refers to the data collection that can not be captured, managed and processed by conventional software tools within a certain time range. It is a massive, high growth rate and diversified information asset that needs new processing mode to have stronger decision-making power, insight and discovery power and process optimization ability. In the information age, data, as the basic resource of people's communication, naturally becomes the source of people's cultural value. Big data is firstly collected in a wide and diversified way, and then distributed computing architecture is adopted to conduct data processing and integration analysis through cloud computing, cloud storage and other ways. With the wide application of the Internet, a large number of high-speed, diverse and valuable features of big data have emerged. In the virtual network world, we extract valuable information from a large amount of information, and then extract its value from effective information. Big data is mainly used in today's aspects by its users' accurate positioning of the required information groups and point-to-point accurate services. The strategic significance of big data technology is not to master huge data information, but to professionalize these meaningful data. In other words, if big data is compared to an industry, the key to the profitability of this industry is to improve the "processing ability" of data and realize the "value-added" of data through "processing".

(2) Digital image processing

Among many art categories, digital image art is an important art form. From a macro point of view, digital image art shares the same artistic characteristics as other art categories: first of all, from the perspective of art composition, digital image art is inseparable from emotion, meaning, concept, etc. in the process of creation, as well as personality in art creation As far as the artistic image of creation is concerned, the intuitiveness and reproducibility have received the diversity of channels, etc., which are all important media attributes of image art in the media. In the research of image art, Marcuse thinks
that image art is the unity of representation and expression. On the one hand, there is the reappearance of reality, and the reappearance process can not be separated from the subjective creative personality and artistic characteristics of the creative subject, while digital technology enables the image art to create a second time after reappearance of reality, so as to enrich the creative personality and artistic characteristics. At present, with the continuous development of science and technology, the relevant technical means to support the film and television are also constantly enriched and diversified, so the image art is becoming more and more diverse, and the definition covers more and more extensive levels. In the current digital era, the channels and media of image communication are more and more wide, such as television, film, video, computer, mobile phone, etc., which have laid important conditions for the production and communication of image art. Digital image art is a general term of expressive space art, which is supported by digital image technology and spread by sound and painting modeling.

2.2 Research Methods
First of all, it adopts the literature research method. Through studying the relevant literature at home and abroad and watching the image data, it obtains a large number of theoretical basis, and strives to get a more complete and accurate understanding of digital image in the application of image art. Secondly, case analysis is used. According to the practical experience of direct participation in the performance, make comparison and analysis to obtain real examples. Using the related theory and technology as the support, to explore, research and put forward the thinking of the data. The case analysis makes the combination of digital image and art works clear at a glance, and clearly understands the role and characteristics of digital image in multimedia theater compared with traditional art theater. In the end, the questionnaire survey method is used to select some performances and works of art in different regions, different types, with great influence and dominated by digital images for in-depth field investigation and research, and the case is specifically analyzed and studied, and the investigation process and findings are summarized from multiple perspectives. In the study of the advantages and disadvantages of digital image wonders, the author mainly takes a dialectical and philosophical perspective to view the advantages and disadvantages of digital image wonders. In the research of the artistic expression characteristics of digital image spectacle, the relevant theories are organically integrated into the analysis and research work, and the combination of artistic expression characteristics and audience psychology is emphasized. In the development strategy of digital image spectacle, induction method is used.

3. Experiment

3.1 Experimental Data Source
This study randomly selected 30 video works for investigation. These works belong to different types, different levels of production, and different levels of genre. The selection of these research objects is mainly based on the factors of the author's development level, the combination of technology application, domestic and foreign cooperation, and economic factors. At the same time, the questionnaire surveys the audience and the work staff of all ages. The comprehensive consideration of these factors is conducive to the representativeness and typicality of experimental data.

3.2 Experiment Implementation
Digital image is a comprehensive art form that integrates digital technology and art. Under the background of digital era, the innovation and change of digital image technology create infinite possibilities for stage art design. Its expression and application in different forms of stage art design make the dance stage performance constantly produce innovation and change in form and content, and promote the development of stage art Dynamic action. Through on-the-spot investigation and analysis of the real application effect of digital image feedback in time, through experiments we know that the structure of film and television art is achieved through montage paragraphs generated by editing.
Different montage paragraphs present different forms of composition through different ways of expression. To a certain extent, montage is a link between the internal rhythm and external structure of the image. Whether this editing technique has such a profound impact on the production and dissemination of digital images is a theoretical issue that we need to think about. On this basis, from the perspective of improving the declassification effect, efficiency and security, this paper studies and constructs the security declassification model of digital image sensitive targets, and explains the construction principle and process of the model in detail. Chinese style.

4. Discussion

4.1 Data Visualization
In the questionnaire survey, a total of 80 questionnaires were sent out, 75 of which were recovered, 70 of which were valid, the effective recovery rate was 93%, and the experimental results were valid. The basic information of the respondents is shown in Table 1.

| Image processing Space | Application Effect | Psychological Effects | Audience Preference |
|------------------------|--------------------|-----------------------|---------------------|
| High                   | Vast Atmosphere    | Majestic              | 32                  |
| Low                    | Airtight           | Security Privacy      | 8                   |
| Big                    | Depth              | Sublime Holiness      | 9                   |
| Small                  | Tiny               | Mysterious and Profound | 21                 |

4.2 Analysis and Discussion

![The Promotion of Digital Image Technology to Image Art](image)

**Figure1.** Promotion of Digital Image Technology to Image Art
The multimedia works under the application of digital image have been loved by the public, and will be more and more closely linked with commerce, which also makes them have an immeasurable market prospect and an irresistible development trend. Due to the increasingly powerful digital technology, digital image brings new visual experience to the audience. More and more art performance forms are combined with digital image, such as opera, drama, musical and concert. Through digital technology, it has played a positive role in many areas of art performance. The combination of digital image and contemporary performing art involves theater lighting, image, performance, sound and interactive devices. Digital image has become the partner of performance role, and the performance form is more and more interesting and creative. With the cultural characteristics of cross-border juxtaposition, digital image blurs the form boundaries of theaters, films, networks and other art media, realizes the interaction and integration of various art forms, thus further expanding the space boundaries of theater art. Nowadays, in this global information age, with the rapid
development of digital technology, the performance of multimedia theater is gradually diversified. In particular, the addition of digital images adds more appeal to multimedia theater works. In the real and illusory theater space, with the change of the scene, the audience's emotions are quickly brought into the works. There is no doubt that the development of digital technology, so that the multimedia image art is no longer small, gradually close to the people, received the love of the people.

5. Conclusion
Under the background of more and more fierce media competition, the trend of globalization is becoming more and more intense, and the speed of global ideological and cultural communication is becoming faster and faster. It can be said that all kinds of cultures and industries are looking for their own development space and direction. In the digital tide, through continuous evolution and improvement, the digital image art is becoming more and more mature In the pre media environment, the demand for digital image art is relatively high. Therefore, under the new development background, only to further enhance the creative research of digital image art, strengthen the optimization and upgrading of creative industries, has become an important prerequisite to meet the theoretical and practical needs of the academic community.

In the new era, the way of human communication is constantly changing, which is closely connected with certain media tools. Among the numerous ways of communication, image is a unique way of communication. Compared with other media tools, image media can effectively transmit a large number of information. At the same time, from the perspective of communication effect, image communication has many characteristics, such as strong visual impact, strong information expression, enhanced receiver's feeling ability, long memory retention time and so on. Therefore, among many media, image media is an important form of media communication. Moreover, with the continuous development of the current network communication technology, the network communication technology has broken the original disadvantages of narrow communication channels, and can effectively spread through a series of channels such as the network.

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References
[1] Bing Lei, Shugang Liu. Efficient polarization direction measurement by utilizing the polarization axis finder and digital image processing[J]. Optics Letters, 2018, 43(12):2969-2972.
[2] Xian Zhang, Yong Su, Zeren Gao. High-accuracy three-dimensional shape measurement of micro solder paste and printed circuits based on digital image correlation[J]. Optical Engineering, 2018, 57(5):1-5.
[3] Yu Li, Robby T. Tan, Xiaojie Guo. Single Image Rain Streak Decomposition Using Layer Priors[J]. IEEE Transactions on Image Processing, 2017, 26(8):3874-3885.
[4] Spiros Kostopoulos, Panagiota Ravazoula, Pantelis Asvestas. Development of a Reference Image Collection Library for Histopathology Image Processing, Analysis and Decision Support Systems Research[J]. Journal of Digital Imaging, 2017, 30(3):1-9.
[5] Alberto Bernardini, Fabio Antonacci, Augusto Sarti. Wave Digital Implementation of Robust First-Order Differential Microphone Arrays[J]. IEEE Signal Processing Letters, 2018, 25(2):253-257.
[6] Elham Farazdaghi, Amine Nait-Ali. Backward face ageing model (B-FAM) for digital face image rejuvenation [J]. Iet Biometrics, 2017, 6(6):478-486.
[7] Tian-Yin Wang, Jian-Feng Ma, Xiao-Qiu Cai. The postprocessing of quantum digital signatures[J]. Quantum Information Processing, 2017, 16(1):19.
[8] Liu, L., Ceylan, D., Lin, C. Image-based reconstruction of wire art[J]. Acm Transactions on Graphics, 2017, 36(4):63.
[9] Feng G, Liu J, Zhang CJ. Artemisinin and AIEgen Conjugate for Mitochondria-Targeted and
Image-Guided Chemo- and Photodynamic Cancer Cell Ablation[J]. Acs Applied Materials & Interfaces, 2018, 10(14):11546.

[10] Smith SM, Nichols TE. Statistical Challenges in "Big Data" Human Neuroimaging[J]. Neuron, 2018, 97(2):263.

[11] Po-Yen Wu, Chih-Wen Cheng, Chanchala D. Kaddi. –Omic and Electronic Health Record Big Data Analytics for Precision Medicine[J]. IEEE Transactions on Biomedical Engineering, 2017, 64(2):263-273.

[12] Bo Tang, Zhen Chen, Gerald Hefferman, . Incorporating Intelligence in Fog Computing for Big Data Analysis in Smart Cities[J]. IEEE Transactions on Industrial Informatics, 2017, 13(5):2140-2150.

[13] Samiya Khan, Xiufeng Liu, Kashish Ara Shakil. A survey on scholarly data: From big data perspective [J]. Information Processing & Management, 2017, 53(4):923-944.

[14] Andrea Rosa, Lydia Y. Chen, Walter Binder. Failure Analysis and Prediction for Big-Data Systems [J]. IEEE Transactions on Services Computing, 2017, 10(6):984-988.