Study on the Layout and Function of the Exhibition and Function of Contemporary Art Museums Based on AIGC

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Abstract. With the rapid development of artificial intelligence technology, the application of AI in various fields has gradually deepened. This article uses the contemporary art museum as the research object to explain how AIGC technology revolutionizes the exhibition layout and functions of the Museum of Contemporary Art. By analyzing the background of the exhibition layout of the Contemporary Art Museum, understanding the problems and challenges existing in the layout of traditional exhibitions, and exploring how AIGC technology solves these problems, including the diversification of the exhibition method, the flexibility and expansion of the space structure, the flexibility and expansion of the space structure And the individualization of the audience streamlined, which helps to provide a richer and interactive viewing experience. This article also analyzes the far -reaching impact of AIGC technology on museum functions, including broadening art collection types, providing new research methods and tools, improving promotion efficiency and expanding coverage, and enhancing the interaction and experimental of education. Finally, the future development trend of the Museum of Contemporary Art is considered, and believes that the application of AIGC technology will bring new opportunities and challenges to the development of the museum. This article aims to provide new ideas and methods for the development of contemporary art museums.

Keywords: AIGC; Modern Art; Museum; Exhibition layout

1 Introduction

AIGC (artificial intelligence generation art) is a product of rapid progress in artificial intelligence technology. It has caused changes in all walks of life, and the field of art is no exception. The emergence of AIGC technology makes artistic creation no longer limited to the hands of human artists, but generates through computers with powerful computing capabilities. The emergence of this technology marks a major change in artistic creation and artistic productivity.[1]

The impact of AIGC technology on the Museum of Contemporary Art is huge. The specific performance is as follows: First, change the structure of the exhibition and make the display method of art more diverse. The new form is displayed, so as to increase the possibility of the audience; in addition, AIGC technology has also changed the audience's visit streamline, bringing new vitality and vitality to the museum. In short, the impact of AIGC technology on

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the Museum of Contemporary Art is positive, and it plays a positive role in promoting the exhibition layout of the museum in various aspects.

The Museum of Contemporary Art is an important place for art collection, research, promotion and education, and is inseparable from the development of AIGC technology. AIGC technology broaden art creation boundaries. Museums are no longer limited to traditional handmade art works in collections, but also can collect artwork generated by AIGC. In terms of research, museums can use AIGC technology to conduct in -depth analysis of the creative process of art, and discuss the nature of art creation. AIGC has also brought many new channels and tools to the museum in promotion and education. The development of AIGC has greatly expanded the functions of the Museum of Contemporary Art.

2 Data source and method

I collected academic papers on CNKI and Web of Science from 1985 to February 25, 2024 with the theme of AIGC technology and contemporary art museums.

The use of Vosviewer's reference analysis Java software can reveal the key cases in the literature and build connections between literature knowledge units. It combines database and analysis tools to achieve knowledge maps in the scientific field. The software shows a macro -knowledge structure and provides visual information analysis: Vosviewer performs well in big data processing with its high -level graphics display capabilities. Through density views, it can accurately identify key points and research in scientific research. Hot spots.[2]

3 Results and discussion

3.1 Publishing trend of papers

According to the results of the China Zhiwang (CNKI)[3], we can find that in -depth analysis of the concept of AIGC in China for the first time in China's academic field is published by Zhai You in the Tencent Industry Development Center. The relationship between AIGC and art. Since then, Chinese scholars have conducted a lot of research and discussions on AIGC, and the topic of AIGC has gradually received widespread attention. At the same time, in the Web of Science database, the earliest record about AIGC can be traced back to 1995.[4]These studies are mainly concentrated in the field of science and technology and technology, and relatively few discussions in the field of art. This phenomenon shows that although the topic of AIGC has become increasingly heating worldwide, it is relatively small in the field of art, especially contemporary art museums.(Fig.1)

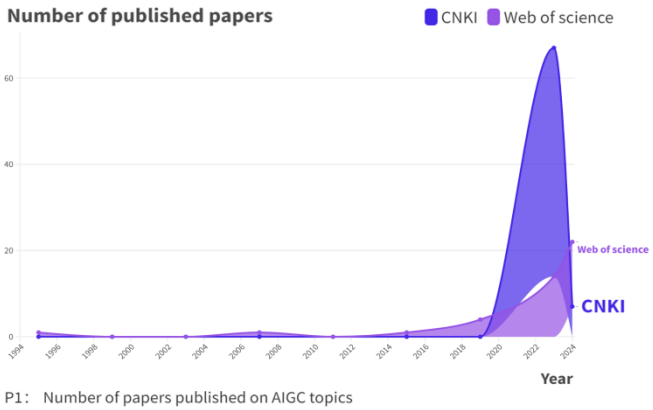


Fig.1. From 1985 to 2024, the development trend of the research and publication of AIGC papers

According to CNKI, since the topic of AIGC in 2022, there are only five research on the AIGC and contemporary art museums. (Figure 2) This number highlights the urgency and importance of research in this field..

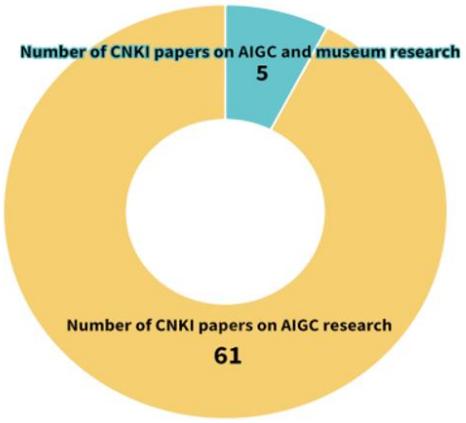


Fig.2. The ratio of the number of papers on AIGC on CNKI and the number of papers in AIGC combined with the AIGC museum

3.2 Research trend

The conclusions and conclusions of keyword representative papers reflect the core issues of researchers' attention. The extraction and system classification of keywords can show the dynamics and trends of the entire research field: After merging some synonymous keywords, I used VosViewer to draw a key density view to analyze the overall trend in the field of research. VosViewer's keyword density view gives node density through weight calculation[5], and color differences directly show the full picture and research focus in the research field. Each keyword has only one color: the keywords close to yellow represent greater density, so it is more important.(Fig.3)

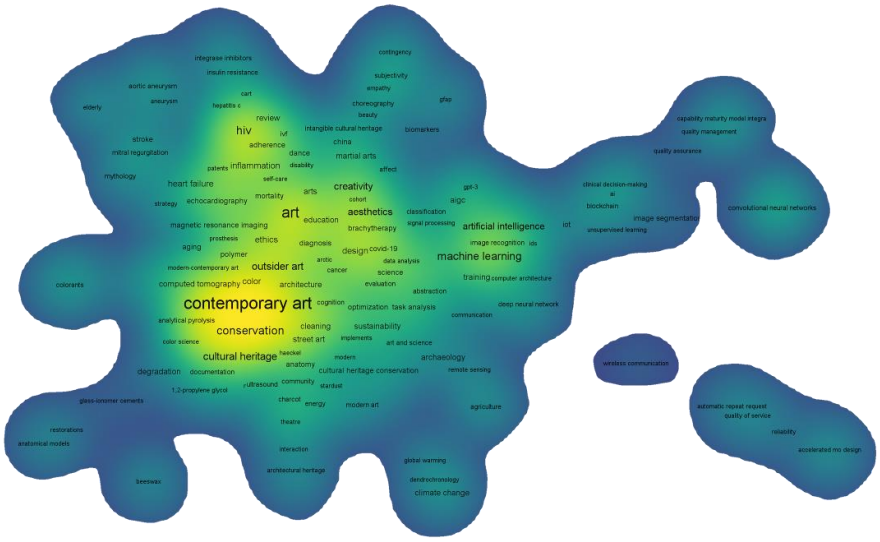
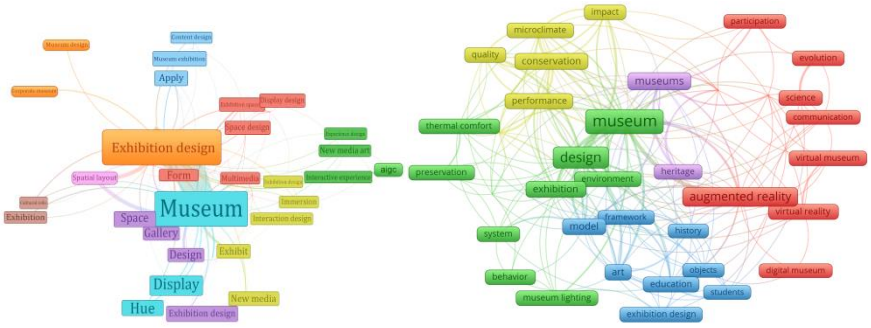


Fig.3. The keywords from VosViewer

3.3 Application of AIGC in the layout of contemporary art museum exhibition

The Museum of Contemporary Art is committed to enriching the content and external form of exhibitions. By integrating new media technology to create an immersive exhibition experience. Although the applications combined with AIGC and exhibitions are not widely popular, this trend has begun to show. This is not only a manifestation of the innovation of the museum exhibition, but also the vivid practice of cultural institutions to adapt to the trend of digitalization.[6](Fig.4)



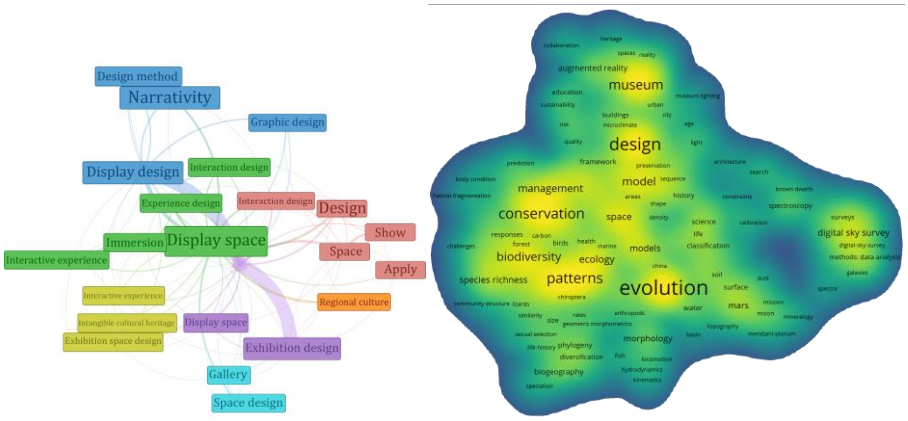
a. b.

Fig.4. Symbiotic view of keywords in presentation mode (a,b)

AIGC makes the museum's exhibition space flexible and changeable, and can meet the richer creative exhibition layout needs. AIGC can combine big data and the Internet of Things technology to show more comprehensive and deeper information on the information of art to the audience and realize the digital replication and display of artworks. The addition of AIGC

has made the Museum of Contemporary Art no longer restricted the restrictions on the exhibition space. Use VR and AR to create immersive art spaces, carry out dynamic space design and interactive space design, integrate multimedia into space, and make the exhibition space layout. More flexible and expanding, it is a useful supplement to traditional exhibition halls.[7]

(Figure 5) It means that in the museum space design, it is still based on experience and interactive design, and does not join new technologies and new media.[8] However, based on the VR and AR Museum, the art experience space that is completely immersed in art is created, enabling audiences to interact with art in physical and virtual spaces, so as to obtain a new viewing body. AIGC can integrate a variety of media elements (such as video and audio text) into the same display space, providing audiences with a comprehensive art experience, and also making the expression of art more diverse and three -dimensional.



a. b.

Fig.5. The symbiosis view (a) and density map(b) of spatial construction keywords.

AIGC technology has changed the audience streamlines of the Contemporary Art Museum, increased the audience's sense of participation and art experience, and can personally provide artistic recommendations. Figure 6 is to further discuss the explanation of AIGC's changes in the museum's audience streamline Graphic presentation. AIGC analyzes the data of the audience's preferences in history, so as to recommend personalized exhibition routes or works for it, and even create art works exclusive to an audience.[9] These changes have not only increased the audience's participation, but also opened up new possibilities for the future development of the museum, so that art has become closer to the public and is more vivid and interesting. At the same time, it also provides more choices for the museum's display method.

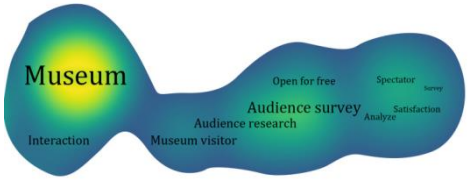


Fig.6. Audience flow line keyword density map

4 Conclusion

After in -depth analysis of the selected documents, the application of AIGC and its diversified role in the field of contemporary art museums were combed, and forward -looking predictions were made for future research directions. It can be seen from the changes in the number of documents that the use of AIGC in the contemporary art museum gradually increases. This shows that with the continuous deepening of AIGC's cognition and evaluation of the application of AIGC in art, people's acceptance of AIGC in the Museum of Contemporary Art is gradually increasing. The exhibition layout and functions of the Museum of Contemporary Art are undergoing revolutionary changes under the leadership of AIGC technology. The AIGC Promotion Exhibition has diversified and flexible space structure, and provides audiences with a personalized visit experience and interactive opportunity. At the same time, the types of art collections have been widened, new research tools and methods are provided, promoting efficiency and covering are improved, and the interaction and experimental of education are enhanced.

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