

# Application and Ethical Issues of Artificial Intelligence in Art And Culture Industry — Stereotypes and Biases Within Ai-Generated Artwork in The Art and Cultural Industries

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**Abstract.** Artificial intelligence (AI) has a huge impact on all major industries around the world. The emergence of AI has led to a lot of discussions on moral and ethical issues. This article explores how AI is applied in the art and cultural industries, with a particular focus on the ethical concerns caused by stereotypes and biases within AI-generated artwork. Through a review of existing literature and data collected from interviews and questionnaires, this study reveals that while AI is seen as a helpful creative tool by some artists and audiences, it also raises serious concerns about authorship, originality, and fairness. The research highlights that public understanding of AI-generated art remains limited, especially among younger audiences, leading to divided opinions about its value and authenticity. Many participants expressed concerns that AI lacks emotional expression and may reproduce existing societal stereotypes due to biased training data. Although some respondents see the potential of AI to enhance creativity, others remain cautious, pointing out the lack of clear ethical guidelines and transparency in how AI is used in artistic creation. Overall, the findings emphasize that biases in AI-generated art can reinforce harmful cultural, gender, and racial stereotypes, and that more attention needs to be paid to these issues in the creative industries. By raising awareness and encouraging responsible development and use of AI, the art and culture industry can move towards more inclusive and ethical practices in the digital age.

**Keywords:** artificial intelligence; bias; stereotype; ethics; creativity.

## 1. Introduction

Artificial Intelligence (AI) is transforming the art and culture industries, offering new opportunities for creativity and efficiency while raising ethical concerns. One major issue is bias in AI-generated artwork, which can reinforce stereotypes, marginalize underrepresented groups, and limit artistic diversity. These biases stem from the data used to train AI systems, shaping creative outputs in ways that may be problematic. This research focuses specifically on the topic of stereotypes and biases within AI-generated artwork in the art and cultural industries, analyzing how these issues emerge and their broader impact on creativity, representation, and fairness. Drawing on literature, interviews, and surveys, this research explores how different stakeholders perceive the ethical challenges of using AI in artistic creation. By addressing these challenges, it aims to promote responsible AI use and encourage more inclusive artistic practices.

## 2. Literature Review

With the progress of human science and technology, Artificial Intelligence(AI) has gradually appeared in various industries in life. In recent years, AI has appeared in the "Creative and Art" industry. Controversial topics about AI have gradually increased, including but not limited to "Stereotypes and Biases in AI algorithms" and "Ethical issues of using AI in the Creative industry." In the field of AI research, there are countless studies around the world. Most of them discuss the "Gender bias", "Racial bias" and "Cultural bias" that appear in AI [1]. At the same time, consider the moral and ethical factors of using AI in the Creative industry. Many studies have shown that the "Stereotypes" and "Biases" in the current AI database exist and have not been well resolved, and the perspectives of using AI in the creative industry are also mixed [1]. This is because the publicity and

popularization rate of AI in society and the public's understanding of AI are not yet complete. Therefore, many people are not clear enough about the problems of AI output on works and AI itself. There is currently some consensus on research in the field of AI, such as the biases in AI mentioned in "Strategies for Bias Identification and Mitigation in AI Art" published by Yellowbrick in 2024: Gender bias in artificial intelligence art may lead to underrepresentation or misunderstanding of individuals based on their gender identity [2]. This may lead to the reinforcement of gender stereotypes and restrictions on creative expression; Cultural bias: Cultural bias in artificial intelligence art can manifest as stereotypes or misunderstandings of certain cultures, races, or communities. This bias perpetuates harmful speech and strengthens existing power dynamics; Racial bias: Racial bias in artificial intelligence art can manifest as discriminatory or biased descriptions of individuals from specific racial or ethnic groups [2]. This bias exacerbates harmful stereotypes and leads to the marginalization of certain groups.

Danil Andreev's *Bias and Fairness in AI and Digital Art: An Ethical Perspective* published in 2024 also mentioned that the reason for these problems in AI is that the AI database is input and trained by humans. Humans are biased, so the inputs to AI will also carry these biases [3]. For example, if an artificial intelligence model is trained primarily on artworks created by male artists, it may be more likely to create artworks that conform to traditional male-dominated art styles and themes. This may lead to underrepresentation of female artists and their perspectives; an artificial intelligence system trained only on European art may inadvertently ignore the nuances and beauty of African or Asian art forms, resulting in biased generated artworks; if an artificial intelligence system is not trained on a diverse data set, it may find it difficult to create artworks that accurately reflect the experiences and aesthetics of marginalized communities, thereby reinforcing stereotypes or underestimating their contributions to art.

In conclusion, the integration of AI into the creative and art industry has sparked significant debate and raised critical ethical and societal concerns. While AI offers innovative tools and possibilities for artistic expression, it is not without its flaws [2]. Studies, such as those by Yellowbrick and Danil Andreev, highlight the persistent issues of gender, racial, and cultural biases embedded in AI systems. These biases stem from the human-driven input and training of AI databases, which often reflect existing societal stereotypes and power dynamics [3]. As a result, AI-generated art risks perpetuating harmful stereotypes, marginalizing underrepresented groups, and limiting the diversity of creative expression.

The mixed perspectives on AI in the creative industry underscore the need for greater public awareness and understanding of AI's capabilities and limitations [4]. While AI can serve as a powerful tool for innovation, its ethical implications—particularly regarding bias and fairness—must be addressed to ensure it contributes positively to the art world. Moving forward, it is crucial to develop strategies for identifying and mitigating biases in AI systems, promote diverse and inclusive datasets, and foster a deeper dialogue about the role of AI in creativity [5]. Only then can AI truly enhance the artistic landscape without compromising the values of equity, representation, and ethical responsibility.

### **3. Research Methods**

This study adopted two methods: interview and questionnaire, and the two studies were carried out simultaneously.

#### **3.1. Interview**

This study uses interviews as one of the important ways to obtain research data.

The researchers selected six interviewees from the target population, three of whom were art creators who were engaged in art-related work or study. There were also three art audiences who did not work or study in the professional field of art. (As table 1 shows) According to the research topic hypothesis, an interview outline that met the needs of each interviewee was designed to further analyze their

understanding and views on AI in the creative industry. Based on the Internet as the main communication connection medium, social media and typing methods can achieve efficient and fast communication, and they are more accustomed to expressing themselves online. Therefore, this research interview was mainly conducted through WeChat private messages, an instant messaging tool.

**Table 1.** Information of the interviewees

	Age	Sex	Occupation	Type of questions
A	40	F	Art Collectors & Art institution owner	Regarding the acceptability of AI-created art appearing in museums. Regarding the acceptance of works created with the participation of AI in competition organizations.
B	22	F	Student	In-depth analysis in your research on biases, stereotypes, and ethics in AI-generated art.
C	31	M	Jewelry Designer	Opinion-based exploratory questions aiming to gather in-depth qualitative data on the ethical, professional, and creative implications of AI in art.
D	17	M	Student	It includes questions about exposure to AI art, opinions on its authenticity, concerns about AI replacing human artists, views on whether AI art should receive the same recognition as human-created work, and interest in purchasing such art.
E	17	F		
F	18	F		

### 3.2. Questionnaire

The collection method used by the researchers can be called "simple random sampling", which is just forwarding the questionnaire to social platforms or groups for voluntary filling. The researchers do not have a very clear target population, and the researchers hope that the data obtained can represent the majority of the population. (As table 2 shows)

All questions are set with multiple choice questions, which is a simple and easy-to-understand way of answering questions, and the time to fill in the form will not be too long, ensuring that everyone fills it out carefully. The questionnaire consists of 11 multiple-choice questions, including the age, gender, and background information of the respondents, as well as their views on AI-created works in different industries. For example, in the art collection industry, the museum industry, etc.

**Table 2.** Question for survey

1	Your gender?
2	Your age group?
3	Are you interested in artwork?
4	Do you always buy artwork? (paintings/sculptures/etc.)
5	Can you accept that the artwork you purchased was created with the help of AI?
6	How would you rate your familiarity with AI-generated artwork?
7	Do you believe AI-generated artwork can be considered authentic art?
8	How does AI-generated artwork compare to human-created artwork in terms of creativity?
9	Have you ever noticed racial, gender, or cultural biases in AI-generated artworks?
10	Do you think AI-generated art contributes positively or negatively to cultural industries?
11	Select "Yes" for this question (to test your concentration when doing survey)

In this questionnaire survey, the researchers collected a total of 275 valid samples in three days.

## 4. Research Observes and Discussion

### 4.1. Interview Results

These issues are echoed by practitioners in the field. For instance, jewelry designer Mr. Tan expressed concern that “a lot of AI generation is based on the secondary use of existing works,” raising issues of plagiarism and imitation, which question the originality and ownership of AI-generated content. Similarly, Ms. Zhang, a design student, pointed out that AI often “uses the works of the original authors without indicating the source or even without the author’s consent,” emphasizing the copyright challenges and the ambiguity in authorship when using AI tools. (As table 1 shows)

From a cultural standpoint, Ms. Kexin, an art institution owner and collector, highlighted that the lack of emotional depth in AI art raises questions about its authenticity and value, especially in traditional art settings. She questioned whether AI can truly capture the emotional and cultural nuance that defines human-created artwork.

Public perceptions further underscore these concerns. High school student Aria doubted the legitimacy of AI-generated art, stating that it is “too reproducible,” thus reducing its value and uniqueness. Nami went further, criticizing AI creation as plagiarism, and Jesson, while more open-minded, still believed that AI art should be evaluated separately from human-created art due to the different nature of effort and intent.

While opinions diverge on whether AI-generated art is “real” art, there is consensus on one key point: AI is a tool, not a replacement for human creativity. As Ms. Zhang noted, AI can “enhance traditional creativity” by breaking through technical limitations and offering new perspectives, fostering a cooperative model between technology and the artist.

The mixed perspectives on AI in the creative industry underscore the need for greater public awareness and understanding of AI’s capabilities and limitations. Moving forward, it is crucial to develop strategies for identifying and mitigating biases in AI systems, promote diverse and inclusive datasets, and foster a deeper dialogue about the role of AI in creativity. Only then can AI truly enhance the artistic landscape without compromising the values of equity, representation, and ethical responsibility.

### 4.2. Questionnaire Results

**Table 3.** Your gender

Option	Count	Percentage
Male	77	28%
Female	192	69.82%
Inconvenient to inform	6	2.18%

The gender of the participants is slightly imbalanced, with nearly 70% of the participants are female. (As table 3 shows) This may be because most art practitioners and people interested in art are female. But the NATIONAL ENDOWMENT FOR THE ARTS' Latest ARTISTS AND ARTS WORKERS IN THE U.S. study shows that the number of arts workers are split nearly 50/50 by gender. So I think this is because most of the people around me are female.

**Table 4.** Your age groups

Option	Count	Percentage
Below15	7	2.55%
15~20	149	54.18%
21~25	25	9.09%
26~30	36	13.09%
31~40	24	8.73%
41~50	23	8.36%
51~60	7	2.55%
Over60	4	1.45%

The researcher mentioned earlier that I don't want to focus on one age group at any time, so I try to find people of all ages to complete my survey. However, due to my age and social circle, most of the participants in my survey are between 15 and 20 years old. (As table 4 shows) But this also means that young people are the group that is more interested in art and has a certain consumption interest.

**Table 5.** Are you interested in artwork?

Option	Count	Percentage
Yes	175	63.64%
No	19	6.91%
Somewhat	81	29.45%

More than 90% of all participants are interested in art or not.(As table 5 shows) The author thinks this lays a good foundation for the following topics. At least most of the participants have a positive attitude towards this research topic. This largely ensures that the entire survey data is credible and the participants did not fill it out in a negative state. At the same time, more than 60% of the participants have purchased art before, so they will have stronger empathy in the following questions.

**Table 6.** Do you always buy artwork? (paintings/sculptures/etc.)

Option	Count	percentage
Yes	32	11.64%
No	116	42.18%
Sometimes	127	46.18%

The survey asked participants whether they regularly purchase artwork such as paintings or sculptures. The results reveal that only a small portion of respondents—11.64%—consistently buy artwork,

indicating that regular art buyers are relatively rare in this group. A much larger segment, 46.18%, reported that they sometimes buy artwork, suggesting that while there is interest in art, purchasing is often conditional—perhaps influenced by factors such as affordability, specific preferences, or the availability of compelling pieces. Meanwhile, 42.18% of participants stated that they do not buy artwork at all, which could point to a range of reasons including limited exposure, lack of interest, or financial constraints. (As table 6 shows) These results highlight an opportunity to engage the sizable group of occasional buyers more effectively, perhaps through targeted outreach, educational initiatives, or more accessible pricing. Additionally, understanding the barriers faced by non-buyers could provide insights for making the art market more inclusive.

**Table 7.** Can you accept that the artwork you purchased was created with the help of AI?

Option	Count	Percentage
Yes	83	30.18%
No	105	38.18%
Unsure	87	31.64%

This data reveals a divided perspective on AI-generated art, with resistance (38.18%) outweighing acceptance (30.18%), while a large portion (31.64%) remains undecided. (As table 7 shows) This indicates that while AI-generated art is gaining some level of acceptance, many ethical, cultural, and artistic concerns still need to be addressed. The high percentage of “unsure” responses suggests a need for clearer communication about AI’s role in art. However, even though the three data are very close, it can still be seen that the audience chose the "No" option the most. Obviously, more people are more resistant to buying artworks that are AI-generated.

**Table 8.** How would you rate your familiarity with AI-generated artwork?

Option	Count	Percentage
Very familiar	15	5.45%
Somewhat familiar	73	26.55%
Neutral	73	26.55%
Not very familiar	94	34.18%
Not familiar at all	20	7.27%

From this data, it can be seen that, in fact, most of the public are not very familiar with artworks generated by artificial intelligence. I think this is an issue that various organizations and society as a whole need to pay attention to and make continuous progress on in the future. However, if so many people are not familiar with AI-generated artworks, it will definitely have some impact on their answers to my subsequent questions. (As table 8 shows) This is because they may not be very sure what AI-generated artworks are like, and they won't have a strong sense of empathy when it comes to answering the following questions.

**Table 9.** Do you believe AI-generated artwork can be considered authentic art?

Option	Count	Percentage
Yes	68	24.73%
No	118	42.91%
Unsure	89	32.36%

Among these participants, 49.1% of them believe that artworks created by AI cannot be regarded as genuine artworks.(As table 9 shows) However, there are still a large number of people who filled in "uncertain". I think it is because the popularity of AI-generated artworks in the public eye is not particularly high yet, which is why there are so many uncertain answers. I think those who chose that AI-generated artworks can be regarded as genuine artworks here must have selected in the previous part that they are willing to purchase artworks created with the assistance of AI.

**Table 10.** How does AI-generated artwork compare to human-created artwork in terms of creativity?

Option	Count	Percentage
More creative	20	7.27%
Equally creative	66	24%
Less creative	113	41.09%
Unsure	76	27.64%

It is obvious that a large number of people think that artworks generated by AI are less creative than those created by humans. Additionally, a significant portion (27.64%) remains uncertain, highlighting the need for more discussions and education on AI's role in creativity.(As table 10 shows)

**Table 11.** Have you ever noticed racial, gender, or cultural biases in AI-generated artworks?

Option	Count	Percentage
Yes frequency	25	9.09%
Occasionally	86	31.27%
Rarely	59	21.45%
Never	35	12.73%
Unsure	70	25.45%

The survey data suggests that bias in AI-generated art is a recognized issue, with 40.36% of respondents having noticed it at least occasionally. However, a notable portion (25.45%) remains unsure, indicating a gap in awareness. (As table 11 shows) The findings highlight the importance of addressing bias in AI development to ensure fairness and inclusivity in AI-generated artworks.

**Table 12.** Do you think AI-generated art contributes positively or negatively to cultural industries?

Option	Count	Percentage
Positive	64	23.27%
Neutral	162	58.91%
Negative	49	17.82%

It is clearly evident that nearly 60% of people have a neutral attitude towards this topic. The author thinks this is largely due to the fact that AI-generated artworks have not been widely circulated in the market, and many viewers are still unfamiliar with what they are. (As table 12 shows)

**Table 13.** Select “Yes” for this question (to test your concentration when doing survey)

Option	Count	Percentage
Yes	273	99.27%
No	2	0.73%

The final question is that the researcher wants to test participants by selecting the 'yes' option. They maintain focus during the survey process, which greatly ensures the credibility of the entire survey. (As table 13 shows)

“What concerns, if any, do you have about AI-generated artwork in the art and cultural industries?” This is a question the author designed to test whether the participants were doing the survey carefully and attentively. It can be seen from the data that everyone was indeed focused.

The researcher also asked this question at the end of the survey. Some people I had discussions with believed that currently, AI-generated artworks only have positive impacts on the cultural industry, but they definitely cannot be called artworks. It is because artworks represent the emotional state and thoughts of the artists at that time, but these are exactly the things that AI lacks.

Some people are also worried that the artworks they buy might be created by AI, but the seller hasn't informed them about it. As a result, they end up receiving artworks whose value doesn't match the price they paid.

The researcher thinks everyone's concerns are very valid. Because AI-generated artworks are not widely circulated in the market at present, and there are some unethical artists who sell AI-generated works as their own artworks. The author thinks this is unethical to a large extent. Moreover, based on the researcher's observation, the researcher believes that there are still a great many stereotypes in the artworks generated by AI. This is also because when humans create AI, they tend to introduce such stereotypes and biases into the AI's database.

## 5. Conclusion

In the context of the art world theory, the integration of AI into the art and culture industry, as revealed in this research, shows that the AI - influenced art world is a complex ecosystem. The biases in AI - generated art, which are related to the data input by humans, disrupt the normal balance and diversity within the art world. Different stakeholders, from professionals to audiences, have diverse views, indicating that the art world's elements - artists, audiences, and the artworks themselves - are all affected. The art world theory emphasizes the interaction of various elements in shaping art, and here, AI has become a new factor that not only influences artistic production but also challenges the

traditional aesthetic and ethical norms, highlighting the need to re-evaluate and adjust the relationships among different elements in the art world to adapt to the emergence of AI.

The integration of Artificial Intelligence (AI) into the art and culture industry presents both opportunities and challenges. While AI enhances creativity and efficiency, it raises ethical concerns, particularly regarding biases and stereotypes in AI-generated artwork. This research, through interviews and surveys, reveals diverse perspectives: professionals and students see AI as a supportive tool but stress the need to address issues like originality and authorship. Younger audiences question AI art's authenticity and express concerns about reproducibility and ethics.

Biases in AI-generated art, stemming from human-driven data, risk perpetuating stereotypes and marginalizing underrepresented groups. Public opinion remains divided, with resistance to AI art largely due to ethical concerns and limited familiarity. To ensure AI's positive contribution, addressing biases, promoting transparency, and fostering ethical practices are essential. By doing so, the art industry can harness AI's potential while upholding values of equity, representation, and creativity.

Despite yielding insightful results, this research has several limitations that should be acknowledged. First, the sample population for both interviews and questionnaires was predominantly drawn from the researcher's immediate social network, which may introduce bias and limit the generalizability of the findings. The demographic skew towards younger individuals (especially those aged 15–20) may not fully reflect the perspectives of older generations or professionals with deeper involvement in the art industry.

Additionally, while the study focused on public perceptions and ethical concerns related to AI-generated artwork, it relied largely on self-reported data. Participants' limited familiarity with AI technology and AI-generated art—reflected in several responses—may have impacted their ability to provide informed opinions. Furthermore, the research primarily adopted qualitative methods and did not incorporate computational or technical analysis of AI-generated artworks themselves, which could have provided a deeper understanding of the nature and frequency of embedded biases.

For future research, several directions can be explored:

**Broader and More Diverse Sampling:** Expanding the demographic and geographic reach of participants can help generate more representative insights. Involving more industry professionals, artists from varied cultural backgrounds, and art consumers from different age groups would strengthen the validity of the findings.

**Longitudinal Studies:** Tracking how public attitudes and industry practices evolve over time as AI technology becomes more integrated into the art world could offer valuable context for policy and ethical guidelines.

**Technical Analysis of Bias:** Collaborating with computer scientists to analyze datasets and algorithms used in AI-generated art can more precisely identify patterns of cultural, gender, or racial bias.

**Policy and Regulation Focus:** Future studies might investigate how ethical frameworks, copyright laws, and institutional policies could be adapted to address the challenges raised by AI in creative industries.

By addressing these limitations and pursuing deeper interdisciplinary inquiry, future research can contribute to a more nuanced and equitable integration of AI within the global art and culture landscape.

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