AI Painting in TikTok: From the past to the future

Shuoshuo Yin¹, Xiaoli Li², Bijun Zhang³, Yuqi Cui⁴, Yuxin Zheng⁵, and Tianyuan Yu⁶

¹Faculty of History, Nankai University, Tianjin 300350, China
²School of Business Administration, Jimei University, Xiamen, Fujian, 361021, China
³School of Business Administration, Jimei University, Xiamen, Fujian, 361021, China
⁴Literature and Journalism, Sichuan University, Chengdu, 610000, China
⁵Radio and Television Major, Chongqing University, Chongqing, 401331, China
⁶Radio & television director, Guangzhou University, Guangzhou 510006, China

*Correspondence: Tel: +8107089720111 (S.Y.)

Abstract

AI painting in TikTok has gained popularity due to advancements in AI technology. The history of AI art dates back to 1973 when the first AI-generated painting was created. TikTok has incorporated AI technology into various special effects, such as the "comic face" effect. The idea behind AI painting is to represent human creations as vectors in a mathematical space. A survey revealed that the majority of respondents had a basic understanding of AI painting and were highly aware of AI painting technology in TikTok. However, many respondents had limited knowledge of its development and related artworks. Ethical concerns surrounding AI art include the potential devaluation of human effort, legal issues, and the possibility of stereotypical and sexualized portrayals. Some artists have also expressed concerns about their artwork being stolen and flooded by AI-generated art. Despite these concerns, AI art presents new opportunities for representation and participation in the art creation process. It is crucial to consider the ethical implications of this evolving technology.

Keywords: AI painting, text-generated image, Tiktok.
1. Project Overview

1.1 What is AI painting in Tiktok?

In the field of AI in 2022, the AI painting model based on text-generated images has become a protagonist. The journey started with Disco Diffusion in February, DALL-E 2 and MidJourney opened a private beta trial in April, Google released Imagen and Parti in May and June, and then Stable Diffusion came out at the end of July. The history of AI art dates back to 1973 when American computer scientist Harold Cohen created the first-ever painting generated by AI. Cohen’s painting was created using a program he developed called AARON. TikTok Special effects have drawn on many AI technology application practices. In 2021, "comic face" special effects used GAN technology. At present, TikTok’s "AI Painting" uses the most popular multimodal generation technology. With the advent of DALL·E, the ByteDance intelligent creation team began to follow up on related technologies in early 2021. After the release of Stable Diffusion at the end of August this year, the TikTok special effects team soon launched its project entitled "AI Painting".

1.2 Why AI painting in Tiktok?

1.2.1 Data analysis from questionnaires

From the questionnaire sent out, we learned that about 80 percent of respondents had a basic understanding of AI painting technology, and 8 percent of respondents said that they were very familiar with it or they had done some research on it.

Specific to the AI painting technology in TikTok, more than 90 percent of respondents said that they have used or knew about the "comic face" special effect.

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Figure 1: Conclusion 1

Figure 2: Conclusion 2
effect in TikTok. It can be seen that both AI painting technology and the AI painting technology in TikTok enjoy a high level of awareness.
However, 67 percent of respondents said they had little knowledge of the development of AI painting technology and related artworks, and 24 percent said they had never paid attention to it. This means that most people’s understanding of AI painting technology and products remains on the surface.
1.2.2 Text analysis from mediaworks

There are concerns about artificial intelligence eventually replacing humans in every industry, and despite how revolutionary AI art is, it is not free from these three ethical concerns.

1. Does AI invalidate human effort?
2. Are there potential legal issues arising from AI?
3. Can AI lead to stereotypical and sexualized portrayals?7

AI image tools still struggle to render hands that look like people’s, and body proportions can be skewed. Also, some artists have been angry that their art trademarks had been stolen.

Greg Rutkowski, a conceptual artist and illustrator, said: "It’s only been a month. A year from now? I probably won’t be able to find my work there because [the Internet] will be flooded with AI art”, Rutkowski told MIT Technology Review, "That’s worrisome."8

In recent years, the art aspect of artificial intelligence (AI) generation has begun to gain popularity, and AI art is an exciting new technological development that may lead to some unique TikTok trends. For example, some non-white creators may find more opportunities to feel represented and participate in art creation. While creators continue to enjoy and experiment with these trending technologies, it is important to consider the ethics surrounding this new software.9

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9Passionfruit Staff, 2022 AI art is taking over social media, but creators are divided, https://passionfruit.ai/ai-art-creators-divided-2664/[Accessed 20th February 2023].
1.3 How to develop AI painting via TikTok?

Address: https://growingupman.wixsite.com/dora-the-explorers

On the right is the video made using Andreas Jansson’s stable diffusion animation. According to the keywords of interest provided by our group members [Picasso with mushroom head] and [Dora under ai], we generated a changeable video expressing the unique characteristics of our group.
The left side shows the key step in reviewing AI painting. Click start now to enter iluminarity, upload your own picture, and identify the similarity of the painting.

Figure 6: About us

Drop-down is a tool for imagining and making content about our website, and turning feelings into quantitative tools.
Figure 7: Our team

A brief introduction to our team

Figure 8: Contact us

How and when to contact us
Thank you for your subscription!

All the Info

Welcome to our blog, a place where we can share our greatest inspiration and candidly display the different sides of our passion project. We believe that being candid and authentic are key to thriving in today’s virtual world. Our blog is a place where celebrating one’s personality, sense of humor, and heart are at the core of our site’s mission. Connecting with the world is what brought us to start Dora the Explorers.

We invite you to explore our content and learn about what makes us tick. Please reach out and engage—we are happy to hear from you, as well.

Here are some good expectations for the website and words to the audience.
Figure 11: Logo

Dora style photo made in Hiroshige Utagawa style, we can click on both sides to read.

Figure 12: Portfolio

A simple short video recording the day and night of our class.
For the basic content of the project, we can click on the name of our professor (Pam) to jump to her personal information.

Figure 14: About Pam

About
Prof. Pamela Burnard.

Position
Professor of Arts, Creativities and Educations, University of Cambridge, UK
Adjunct Professor with the School of Humanities and Communication Arts of Western Sydney University, Australia
Adjunct Professor Instituto Katarina Gurska, Madrid, Spain
Fellow of the Chartered College of Teaching, UK
Fellow of the Royal Society of Arts (RSA), UK
Fellow of the International Society for the Study of Creativity and Innovation (ISSCI)
Advisory Board Member for the Global Institute of Creative Thinking (GLoCT)
Review Panel (on Arts and Literature Research) of the Academy of Finland
REF 2021-2022 appointment as specialist advisor to the SF33 Sub-Panel

Qualifications
1999 PhD University of Reading, England (ESRC Studentship)
1995 MEd University of Queensland, Australia
For the basic content of the project, we can click the name of professor Pam to jump to the personal information of professor Pam.

Pay attention to the academic frontier and track the latest research direction.

Be realistic and humane, and break through the barriers between AI and humanity.

Use the website as a detection tool, import the painting of ai painting into the review program, and then identify the similarity and give it to the user for judgment, which is easier than our direct definition of infringement standards.
Figure 15: Present

At the bottom of this page is a Christmas tree for professor Pam. You can choose your own music.
2. Project Background

TikTok is a short video social application with a wide audience at home and abroad. Previous studies on the relationship between TikTok and AI have focused on how TikTok uses AI technology to guide users. But recently, TikTok has used AI technology to explore a number of technology products related to AI painting, such as AI Art-generated technology and AI portrait, which means it can automatically and quickly generate an AI painting based on descriptive text or through face recognition. For some time now, this artificial intelligence painting technology has been widely discussed. Moreover, the discussion on the relationship between AI painting and human painting has been raised. To study the introduction of AI into TikTok is not only of academic significance, but also of practical and humanistic concern, which reflects its social significance.
3. Division of roles & responsibilities

![Timeline Diagram]

**Figure 16: Timeline**

<table>
<thead>
<tr>
<th>name</th>
<th>Roles &amp; responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Li Xiaoli</td>
<td>Team leader &amp; website display</td>
</tr>
<tr>
<td>Yin Shuoshuo</td>
<td>Team leader &amp; project proposal</td>
</tr>
<tr>
<td>Cui Yuqi</td>
<td>Data analysis</td>
</tr>
<tr>
<td>Yu Tianyuan</td>
<td>Spokesperson</td>
</tr>
<tr>
<td>Zhang Bijun</td>
<td>Questionnaire design</td>
</tr>
<tr>
<td>Zheng Yuxin</td>
<td>Text analysis</td>
</tr>
</tbody>
</table>

**Table 1: Roles & responsibilities**
4. Challenges & Solutions

(1) The existing research sources are relatively limited and the research perspective is single

The research pays too much attention to the development of technology itself, and neglects the connection with humanity and society.

Solution: Through the analysis of the media publicity and the results of the questionnaire survey, the relationship between technological development and humanity and society is reflected.

(2) The information reported by the media is substantial, scattered, and difficult to sort out.

Solution: Extensively collect the reports of influential media in Chinese and English, and collate the media including the news, article, pictures and even videos systematically. In the process of collecting and searching, pay due attention to reasonable classification of the data for future collation.

(3) questionnaire survey methods

The number of respondents is insufficient.

Solution: It is necessary to carefully consider the question design of the questionnaire itself. After obtaining the questionnaire data, the questionnaire data should be evaluated. Disseminate the questionnaire and collect data as widely as possible.

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Research Guidelines: This study has followed the research guidelines of Humanities, Arts & Digital Creativity, Cambridge Programme 2023. Ethical principles were followed according to the guidelines of Humanities, Arts & Digital Creativity, Cambridge Programme 2023.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: please contact the corresponding author for the reasonable access to the data.

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Conflicts of Interest: The authors declare no conflict of interest.
References


Passionfruit Staff, 2022 AI art is taking over social media, but creators are divided, https://passionfruit.it/ai-art-creators-divided-2664/[Accessed 20th February 2023]