

AI Plus TikTok: Unlock Unlimited Possibilities for Short Videos

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Abstract. In today's Internet era of rapid development, science and technology are developing rapidly. As time goes on, new technologies are constantly emerging. Among them, ai has brought countless conveniences to people's lives. The influence of AI is widely involved in various fields, and short video applications are one of them. In particular, popular platforms such as TikTok have experienced an innovative change with the help of AI. The focus of this study is precisely the significant role that AI has played in short videos with TikTok. TikTok artificial intelligence, through intelligent analysis of users' behavior habits, interests, and other data, can accurately recommend short video content that users may be interested in so that each user can quickly find their own treasure in the huge information ocean of Tiktok.AI the same time, it can also help creators better understand their audience so that they can optimize the creation of reverse, and produce more suitable for the public taste of short videos. AI algorithm, which is the core engine for the efficient operation of the entire platform. Whether it is video classification, recommendation, traffic classification, or management, the Tiktok AI algorithm plays a crucial role.

Keywords: AI special effects; TikTok; TikTok AI algorithm.

1. Introduction

In the tide of the digital age, TikTok has risen rapidly. It has become a source of joy for public entertainment, and a variety of interesting video content allows people to laugh and relax in their leisure time. It is also an efficient channel for information dissemination. Whether it is current affairs news, knowledge popularization or life tips, it can spread rapidly on Tiktok, breaking the limitations of traditional information dissemination. It is also a lively stage for social interaction, where the distance between people is narrowed, and people share their lives, opinions and emotions through likes, comments, and clicks. At the same time, ai technology has set off a revolution in the field of Tiktok short videos. Starting from the creation of videos, AI technology provides creators with more convenient and rich creative tools, so that the realization of creativity is no longer limited by the technical threshold. In terms of content recommendation, AI can accurately analyze each user's interests, hobbies and browsing history, and present short videos that most suit users' tastes in front of their eyes, greatly improving the efficiency of users' discovery of high-quality content; In the optimization of user experience, whether AI automatically adjusts the video quality to adapt to different network environments, or provides users with more convenient operation methods through intelligent voice interaction, users can feel meticulous care in the process of using Tiktok. This impact is so profound that it has been deeply embedded in the soul of Tiktok , pushing Tiktok towards a more intelligent and personalized direction.

This article will discuss the role of artificial intelligence in the field of short video, analyze its advantages and disadvantages.

2. AI innovation Short Video

2.1. Tiktok Effects and Artificial Intelligence

AI can replace manual language dubbing, video editing, photo drawing, scene construction and other complex and tedious work. Through huge data analysis and training, the computer has been able to automatically draw a photo, a video, a piece of music, etc., according to the input work

requirements and the style of the work, which saves a lot of time and energy for the creator, so that they can focus more on the early important work such as creativity [1].

Convert the live video or photo taken by the user into a caricature-style image, retain the facial features and expressions of the characters, and give the two-dimensional painting effect or convert the video or photo of the user into an oil painting style, so that the picture has a strong artistic atmosphere, more rich colors and more obvious strokes. Or after the user uploads their own photos, the system uses AI technology to generate a digital avatar, which can imitate the user's actions and expressions, and the user can make the digital avatar appear in various scenes instead of themselves, such as dancing, performing, etc., to create unique visual effects. Through AI analysis of the facial features of the star, and then the user's facial features and the star's fusion, the user's face looks like a star or the use of AI technology to replace the background of the video in real-time, the user can choose a variety of virtual scenes, such as stars, beaches, forests, etc., even if filmed indoors, can make the video appear as if in different scenes. Make the video more interesting and attractive. TikTok has launched several independent AI chatbot products, such as Dou bao. Dou Bao has the function of Vincennes, Vincennes chat. Users can chat and interact with it through the Dou Bao app, and it can answer various types of questions, including common sense questions, scientific questions, technical questions, etc. It can also provide English translation, grammar, vocabulary and other aspects of help, acting as a writing assistant, providing users with writing inspiration, writing guidance, grammar check, etc., and can also conduct text summaries and sentiment analysis. The basic principle of AI dubbing includes three aspects: text processing, speech synthesis and timbre adjustment. First, the system needs to process the input text, analyze it into semantic information, and train and optimize the model. Secondly, by using the semantic information obtained after text processing, the generative model is used to synthesize speech and generate speech content conforming to grammatical rules and habits. Thirdly, according to the user's needs and personalized Settings, the timbre adjustment technology is used to adjust the synthesized speech to meet the user's requirements [2].

In addition to captioning and dubbing, news anchors can also be automatically generated by artificial intelligence. In the scenario where a news anchor needs to be added, a virtual anchor can be generated with one click only by inputting the anchor's commentary, and the anchor's mouth shape perfectly matches the content of the voice broadcast. Anchors can choose different images and backgrounds, and can also adjust the speed of speech, which can be inserted into the video project as needed after generation. Anchors with green backgrounds can further remove the background with one click through the matting function of AI video editing and be perfectly embedded into the video content [3].

2.2. The Impact of AI on Tiktok Short Video Platform and User Experience

The application of AI technology makes video content creation more efficient and personalized. For example, AI can assist in editing work such as video editing, color tuning, and special effects, reducing production costs and improving creative efficiency. In addition, AI technology can also provide personalized content recommendations based on user behavior and preferences, increasing user engagement. To improve creative efficiency, AI can automatically complete some tedious creative tasks, such as video editing, special effects production, and subtitle addition. This greatly saves creators time and effort, allowing them to focus more on the creativity and expression of their content. For example, some AI video editing tools can automatically identify highlights in a video, quickly generate a version of the clip, and the creator only needs to make fine adjustments based on this. Moreover, AI can also quickly generate various styles of special effects according to the needs of the creator, adding visual effects to the video. For some users who lack professional video production skills, AI technology makes it easy for them to create short videos. For example, through simple text input or voice commands, AI can generate corresponding video content, so that more people have the opportunity to participate in the creation of short videos, enriching the content ecology of TikTok. By collecting users' basic information, viewing history, interactive behavior and

other data, Tiktok can build user portraits, understand users' interests and hobbies, and recommend content related to users. The algorithm analyzes the characteristics of the content, including tags, categories, topics, etc., in order to match it with the user's interests and make personalized recommendations based on the user's preferences and behaviors. If a user watches a particular type of video more often, the algorithm will recommend similar content more often. TikTok will also consider current hot content and trends and recommend popular videos to more users to increase their exposure and spread. The user's interaction with the content (such as likes, comments, shares, etc.) is recorded by the algorithm and used as an important reference for recommendations. Intelligent customer service, AI chatbots can be used as intelligent customer service in the broadcast room, helping to answer questions of the audience, dealing with after-sales affairs, etc. This not only reduces the work burden of anchors, improves service efficiency, but also provides users with accurate information and help in a timely manner, and improves users' shopping experience and satisfaction. To enhance the interactive experience, AI can analyze the barrage, comments and other information in the live broadcast room to provide real-time feedback and suggestions for the main broadcast. For example, AI can identify the audience's emotional tendencies and help anchors understand the audience's preferences and dissatisfaction with live content, so as to timely adjust the live content and rhythm and improve the audience's participation and interaction effect.

3. The Advantages and Disadvantages of AI for Tiktok Short Video and Future Trends

3.1. Advantages

From the current trend, generative AI will further promote the automation and intelligent process of short videos. With the continuous improvement of computing power, AI will be able to understand video content more accurately, and automatically complete complex tasks such as editing, color mixing, and special effects addition, greatly improving production efficiency. Generative AI is short-sighted in real-time

Frequency processing also shows the potential for more efficient, real-time content optimization and special effects in addition live broadcasts, video conferencing and other scenes, thus significantly improving the user's viewing experience. At the same time, the interactivity of AI will also be enhanced, and users can interact with AI through natural language or gestures, etc., to achieve more personalized editing needs. Generative AI will not be limited to the processing of a single mode but will develop in the direction of multi-mode fusion, by combining text, images, audio and other information sources, to generate richer and diverse short video content. In addition, AI will also serve as a creative stimulation tool to help creators discover new creative inspiration and perspectives [4].

Tiktok uses deep learning technology to accurately recommend personalized content by analyzing user behavior data, which improves user stay time and platform activity. Content creation tools, AI technology provide rich filters and special effects, lowering the threshold of content creation, making it easy for users to create short videos with professional effects. AI painting and writing, AI painting tools automatically generate images according to user input keywords or sketches, AI writing tools quickly generate high-quality article or text content, improve creative efficiency and provide inspiration for creators. The intelligent creation platform, launched by Tiktok, supports video, graphic and live broadcast creation, and improves creation efficiency and content quality through AI

3.2. Drawback

The content generated by AI may be amazing at first glance, but it is easy to cause aesthetic fatigue because AI paintings and videos are often calculated through models on top of the painting style and skills already created by humans, lacking deep understanding and innovation. The development of artificial intelligence technology has made it easier to generate realistic images and videos, which may lead to the spread of false information and an increase in deep fake content. A large number of

similar videos may overwhelm the platform, affecting the diversity and innovation of content. For example, some people may use artificial intelligence technology to generate false and untrue information, which may have a negative impact on society. Data privacy and security, the collection and analysis of massive user data may lead to data privacy and security issues, how to use data under the premise of protecting user privacy is a challenge. Management challenges: The large-scale launch of AIGC technology has brought new management challenges to the platform content ecology, such as the risk of content fraud. The platform needs to strengthen the audit and management of such videos. The application of AI technology may have an impact on real creators, especially in fields such as live broadcasting, where the efficiency of AI anchors may be lower than that of real people and may be banned by the platform. Although AI technology provides a new way to commercialize, there are still many challenges to achieve a significant scale of commercialization, such as high research and development costs and long realization cycles.

3.3. Future Trend

As the relevant departments of the supervision of short videos has become normalized and professional, want to spoof, bad, vulgar, violent, pornographic and so on. Short video platforms with eye-catching content and traffic will find it difficult to survive. The only way out is to produce and disseminate high-quality content and attract users through differentiated positioning of content. UGC (user produced content) and PGC (professional produced content) are the main production methods for short videos. The former production threshold is low, the production process is simple, the production of video content involves a wide range, but the professionalism is weak; The latter has good technical expertise and high video quality, but the cost is also high. At present, more short videos are produced by non-professional users in China, while less are produced by professional users, resulting in uneven quality of short video content in China, mainly social and entertainment attributes [5].

With the support of AI big models, the explosion of short video content will inevitably promote personalized consumption upgrades: AI big models can better understand the interests and preferences of users, so as to provide more personalized short video recommendations. This will enhance viewing experience and increase user engagement. At the same time, AI technology can create more personalized content. Through the use of AI technology, creative designers can provide customized experiences for different audiences based on their characteristics and needs. Users will also be able to customize their own short video content according to their own interests and preferences, and the platform will also push more personalized short video content according to the needs of users.

4. Conclusion

In today's rapidly developing Internet era, the digital tide is surging, and the short video platform Tiktok has risen rapidly, becoming a key platform for mass entertainment, information dissemination and social interaction. At the same time, artificial intelligence (AI) technology has profoundly affected the field of TikTok short video like a storm. AI has played an important role in many aspects of the field of TikTok short video.

In the application of special effects and artificial intelligence, the user's real material can be converted into a comic or oil painting-style image, and the digital avatar can be generated for the user to imitate their own action expression, so as to achieve the integration of the facial features of the user and the star, and real-time replacement of the video background to add interest and attraction. In addition, Tiktok launched AI chatbot products like Dou Bao, which have Vincennes, and Vincennes chart functions, and can answer many types of questions, including common sense, scientific and technical questions, and also help users in English learning and writing. In the aspect of speech synthesis, the core part of the speech synthesis model is trained by a large number of speech data to learn the correspondence between text and speech and speech features, and the speech synthesis

engine converts the speech features obtained by the model. All in all, AI is fully embedded in Tiktok from creation, and recommendation to user experience optimization, and it is of great significance to the development of Tiktok to promote its deep transformation in the direction of intelligence and personalization.

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