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Exploring the Convergence and Innovation of AI Technology in Short Dramas Production

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Abstract

In the context of exploring how Artificial Intelligence(AI) can revolutionize the entertainment industry, more and more film and television productions have begun to try to intervene AI technology in various aspects of content creation. However, despite the fact that AI can generate a large amount of textual content and dynamic visual effects, it still faces challenges in terms of plot expression and delivery. This thesis explores the strengths and weaknesses, innovations, and future developments of AI technology in plot production by analyzing existing film and television productions and production practices generated using AI technology. The study proves that as AI technology continues to improve, its use in short-form production will become more and more prevalent in the future, helping human creators become more efficient and even able to produce Short Dramas in full flow.

Keywords: *AI generated Short Drama, Short Drama, AI Technology, Film and Television Creation, Innovative Applications, Natural Language Processing (NLP), AI Visual Effects*

1. Introduction

In the era of digitalization and informationization, the rapid development of AI technology has brought great potential and application prospects to various fields, and the field of short dramas is no exception. In this paper, we will analyze the current application cases of AI technology in film and television works, and focus on the innovative application of AI technology in the production of short dramas, including automated processes, creative stimulation and personalized customization technology, while exploring its advantages, disadvantages

and limitations in conjunction with actual cases and audience feedback. Finally, it looks forward to the future development trend and application prospect of AI technology in the field of short drama production, providing new ideas and insights for the development and innovation in this field.

2. Theoretical Background

2.1 AI Film and Television

With the rapid development of AI technology, the film and television industry has also taken advantage of this technological hotspot to create, and a large number of film and television works involving AI have emerged, which not only demonstrate the various applications of AI technology, but also explore its far- reaching impact on society, ethics and human life. Nowadays, various types of film and television works involving AI have appeared both at home and abroad, and Table 1. provides an introduction to some of the classic film and television works using AI technology, covering a wide range of AI technology applications and innovations.

Table 1. Examples of AI Films and TV Productions

Work	Image	Episodes/Duration per Episode	AI Application Phases	Genre/Type	Description
Chinese Mythology		6 episodes/4 minutes each	Entire Process	Micro-Shortdrama/ Mythology	Tells 6 classic ancient Chinese mythology stories, a pioneering application of AI technology in visual storytelling.
On the Trail of the Chinese Dragon		6 episodes/5 minutes each	Entire Process Translation	Micro-documentary/History and Culture	Tells the origin of the Chinese dragon, modernizing cultural heritage through AI, disseminated through new media.
Poems Through the Thousand Autumns		26 episodes/7 minutes each	Text to Video Generation, etc.	Micro-Shortdrama/ Animated History	Presents the profound depth of classical Chinese poetry with a beautiful art style and modern technology.
The Frost		12 minutes	Entire Process	Micro-movie/Sci-Fi Adventure	A disaster film set against the backdrop of global extreme climate change.
Our T2 Remake		90minutes	Entire Process	Movie/Sci-Fi	Tells the story of a future world dominated by ChatGPT, where robots travel back in time to eliminate the leader of a human resistance.
TCL Human Future Fantasia		6 episodes/15 minutes each	Visual Design, Translation, etc.	Short Drama/Sci-Fi Animation	Explores AI and future themes, exploring the possibilities of technology and human life.

Form Table 1, we can see that these film and television shows have not only been successful in entertainment, but have also triggered extensive discussion and thinking about AI technology among the audience. In addition, CCTV and Shanghai AI Lab jointly launched the "CCTV Listening Media GPT " big model, based on the "Animate Diff" framework and a number of controllable image generation technology, for the film and television content production has brought about revolutionary changes, and the *Poems Through the Thousand Autumns* the first season of the film, which is all produced by generative AI.

As shown in Figure 1 below, the movie's character art design allows users to generate animated characters with a single click by uploading a reference style image and attaching a text description, which greatly improves design efficiency. Scene and building art design is just as convenient, and you can generate smooth transition animations by simply providing images or video footage. In addition, the auxiliary animation generation function is also very powerful, the user only needs to simply enter the command, such as "make the protagonist smile, " and select the object to enter the dynamic effect of the prompt word, you can easily get the desired animation effect. The realization of these functions, thanks to the strong support of the "CCTV Listening Media GPT" big model, for the film and television production industry has brought unprecedented convenience and creative space.

Figure 1. CCTV Listening Media GPT - AI Art and Animation Applications

2.2 Audiovisual Feedback

In order to better understand audience responses in AI film and television productions we collected and analyzed audience audiovisual feedback on several film and television productions, and Table 2. shows the specifics of this feedback in detail.

Table 2. Market Response to AI Films and TV Shows

Work	Audiovisual Impact
Chinese Mythology	Received widespread attention and acclaim from audiences after being released on online platforms.
Poems Through the Thousand Autumns	Reached a cumulative audience of 94.413 million views.
TCL Human Future Fantasia	Surpassed 100 million views on Douyin. (Chinese version of TikTok).
The Frost	Achieved 100,000 views, marking a significant milestone for AI-generated content in the film and television industry.
Our T2 Remake	Sold out tickets for the movie's premiere screening.
Secret Invasion - Opening Credits	Generated strong reactions on social media, with some viewers expressing disappointment alongside support.

It can be seen that AI still has a strong attraction, and viewers will be the first to appreciate the movie and television products brought through AI technology. While appreciating this, some viewers may appreciate the innovation and novelty that AI technology brings to the production of short drama, and get excited about the unique plots and characters generated through AI, while some viewers may express concerns and questions about the application of AI technology, and believe that the work loses its soul and depth.

3. Research Content

3.1 Analysis of the Creation Process of Short Dramas

The creation of a short drama is a complex endeavor that involves multiple steps from conception to the final product, each with its own specific tasks and goals. After clarifying the content and objectives of each stage, it ensures that the creative process runs smoothly and ultimately presents a high-quality short dramas. The analysis of Table 3. shows that the normal filming steps can be replaced with relevant AI tools.

Table 3. Short Drama Creation Steps and AI Tool Alternatives

Process	Traditional Short Drama Creation	AI Technology
Script Writing	Writers manually write the script.	AI utilizes NLP and generative models to write the script.
Character Development	Actors shape and perform the characters.	AI generates character traits and emotional clues for the characters.
Scene Design	Designers create scenes based on plot requirements and artistic sense.	AI technology generates virtual scene models and special effects.
Production Process	Various departments collaborate to complete the actual shooting.	AI technology monitors and analyzes the shooting process in real-time.
Post-production	Editors and visual effects teams process the footage.	AI technology handles voice dubbing and editing based on audience feedback and data analysis.
Final Product	Directors and producers conduct final review and select platforms for distribution.	AI systems provide recommendations based on audience feedback and data analysis.

The presentation of Table 3. shows that each creation step can be replaced or optimized by corresponding AI tools. These AI tools can not only improve the creation efficiency, but also bring more creative space and possibilities to help the creators better complete the production of short drama.

3.2 Compatibility of Short Dramas with AI

Compared to traditional long-running TV dramas, short dramas, with their streamlined length and compact plots, are able to capture the attention of viewers in a short period of time and quickly convey storylines and character traits. At the same time, low-cost production also allows for greater flexibility and adaptability of short dramas, enabling high quality film and television productions to be accomplished with limited resources of all kinds.

The application of AI technology in the production of short dramas further enhances the production efficiency and innovation of short dramas. AI can quickly generate scripts, design scenes and special effects, and complete post-production, resulting in significant savings in production costs and time. Through big data

analysis and algorithms, AI can also generate a variety of innovative scripts and characterizations, injecting new energy and creativity into short dramas. In addition, AI is characterized by rapid iteration and high adaptability. It can quickly adjust and optimize the content of short dramas based on audience feedback and market demand, and constantly iterate and improve to meet the changing tastes and needs of the audience.This flexibility and adaptability gives AI-produced short plays great potential and room for growth.

3.3 Pros and Cons of AI Short Drama

Breaking the Limitations of Filming. The audiovisual works created by AI bring the audience an unprecedented visual experience with its unique aesthetic perspective, which contains a sense of wonder and strangeness that effectively stimulates the audience's already blunted sensibility.As shown in Figure 2. it is the content of the opening credits of the movie and television production *Secret Invasion*. The screen uses dark green as the main color, and the elaborate character landscape and scene design creates an eerie and gloomy atmosphere. The production team made full use of AI technology to create unique character traits and movements that fit the desired aesthetics, realizing effects that are difficult to achieve with traditional filming with AI's unique sense of technology and realism. This not only shows the great potential of AI in film and television production, but also brings a new visual enjoyment to the audience by creating images from fantasy and achieving the effect of "landscaping".

Figure2. *Secret Invasion* - AI generated opening credits

Reduce Costs and Increase Efficiency. In traditional film and television production, post-production takes a lot of time and cost, and the use of AI can reduce production costs and improve production efficiency, complex production process due to the use of many types of AI tools can be optimized, short-term can achieve high-quality results. The *On the Trail of the Chinese Dragon* uses state-of-the-art AI technology for the full translation process, from voice recognition, text translation, voice cloning to split-track replacement. The English translation highly reproduces the style and narration of the original Chinese movie, reduces the translation cost and ensures the accuracy of the translation through human-computer collaboration, and greatly improves the efficiency of the translation.

Inaccurate Portrayal of Character Details. In *The Frost*, based on the content analysis of Figure 3. in which the character blinks, the five senses except the eyes are obviously stiff,Characters are slow to respond and inflexible when performing physical movements,When the character speaks, the voice and mouth shape are more synchronized, but only the mouth dynamics can be seen, and the facial muscles are slightly rigid. On the contrary, the scene generation is much more natural, and the snowstorm and tornado seem to be realistic.
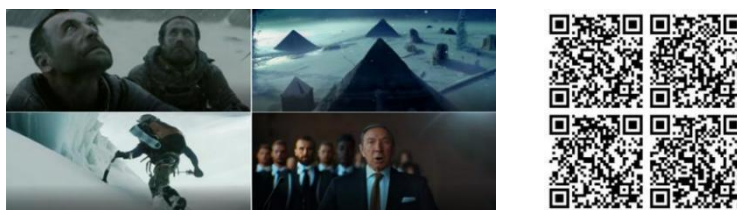
Figure3. *The Frost* - Dynamic Details of Characters and Scenes.

Therefore, the performance of AI is highly dependent on the quality and diversity of the training data, and if the training data is biased or incomplete, the generated content may reflect the corresponding bias or flaws.Therefore, the use of AI to produce short characters in the current stage may lead to some problems, however, these problems are expected to be gradually improved with the continuous progress and optimization of AI technology.

4. Conclusion

Through in-depth analysis of the application of AI technology in the field of drama production, this paper finds that AI technology has been applied to the creation of documentaries, animation, science fiction films, and short dramas at home and abroad, and combines with traditional culture to show new forms of artistic expression. And AI as an auxiliary tool, combined with the creativity and emotion of human screenwriters, can improve the quality and efficiency of the work. To summarize, AI technology continues to improve, its role in film and television production will gradually shift from a supportive tool to a creative entity. Although AI still faces limitations in narrative creation, its application in Short Dramas content holds great promise and is expected to become a significant production method in the future.

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