The Role of AI and Robotic Technology in Film Marketing: Opportunities, Challenges, and Future Directions

Jialun Li

Waring School, Boston, United States, 10921
william.li@waringschool.org

Abstract:

With the advent of the digital era, artificial intelligence and robotics have been widely used in movie marketing, significantly improving the accuracy of ad placement, the efficiency of data analysis, and the interaction with the audience. Taking the marketing of *The Wandering Earth* and *Under One Person* as case studies, this paper explores the effectiveness of these technologies in film promotion, demonstrating their advantages in personalized ad push and social media viral communication. However, over-reliance on technology may lead to a lack of creativity, homogenization of content, and the emergence of data privacy and ethical issues. This study argues that future film marketing should focus more on combining creativity and personalization while strengthening data privacy protection and ethical regulations. In addition, marketing teams need to cope with challenges such as social media information overload and platform algorithm changes. This study summarizes the limitations of current technology applications and proposes future research directions, aiming to provide a reference for innovation in movie marketing.

Keywords: Artificial Intelligence, Robotic, Film Marketing, Data Privacy.

1. Introduction

In today's digital age, film marketing is undergoing unprecedented changes [1]. With the rapid development of technology, especially the extensive application of artificial intelligence (AI) and robot technology, the means and methods of film marketing have become more diverse and efficient [2]. These technologies are widely used in automated advertising placement, data analysis, and virtual assistants. For example, AI technology can accurately push advertisements to target audiences according to the characteristics and behavioral habits of the audience [3]. Data analysis can help marketers better understand audience needs and market trends, formulating more effective marketing strategies [4]. Virtual assistants (such as the currently widely used ChatGPT and other AI assistant software) can provide audiences

personalized services and information, greatly enhancing the user experience. The introduction of AI and robot technology improves the accuracy and efficiency of film promotion and offers strong support for formulating personalized marketing strategies [5, 6].

Although AI and robot technology have shown great potential in film marketing, their application also brings new challenges and problems [7]. Will AI and robot technology lead to a lack of creativity and content homogeneity in film marketing? Although these technologies can improve efficiency, they are essentially data-driven tools and lack human creativity and imagination. In terms of data privacy and ethics, is the extensive application of AI technology likely to cause audiences' concerns about personal information security? These issues not only concern the technical application effect of film marketing but also involve the film industry's future development direction and social responsibility. Based on the above background, this study will focus on discussing the impact of AI and robot technology on film marketing, analyzing its advantages in improving efficiency and enhancing interactivity, and also evaluating its potential deficiencies in creativity and privacy protection.

This study mainly adopts the case analysis method, combines theory and practice, and discusses the application effect of AI and robot technology in film marketing. Taking "The Wandering Earth" as an example, analyze how it uses AI technology for automated advertising placement and data analysis in marketing. Through accurate analysis of audience interests and viewing history, the click-through rate of advertisements has been effectively improved. This study will also analyze the "Under One Person" promotion strategy on social media. Released short videos, stills, and behind-the-scenes footage on platforms such as Douyin successfully attracted the audience's attention. The interaction between the leading actors, directors, and fans has formed a strong fan community. Based on these case analyses, this study summarizes the actual effects of AI and robot technology in film marketing and proposes future development directions and suggestions. At the same time, this article also discusses the limitations of the research and suggests the possibility of future research to provide a reference for subsequent research.

2. The Impact of Digital Age Development on Film Marketing

With the digital age's advent, film marketing faces unprecedented opportunities and challenges [8]. The rapid progress of technology has changed traditional film promotion methods, making film marketing more diverse and complicated. The development of digital technology, especially the application of AI and robot technology, has greatly improved the accuracy and efficiency of film promotion, enabling films to reach target audience groups more accurately [9]. In addition, the rapid rise of social media platforms (such as Douyin, Kuaishou, Xiaohongshu, Bilibili, etc.) provides an unprecedented broad platform for film marketing, enabling films to attract a large number of fans through interaction with the audience and achieve viral transmission. Applying these new technologies and platforms has brought great opportunities for film marketing, enabling films to establish connections with the audience more innovatively and effectively.

The digital age also brings a series of new challenges. For example, with the extensive application of AI and robot technology, film marketing may face the risk of a lack of creativity and content homogeneity. Although AI can provide accurate market insights through data analysis, the content it generates often lacks humans' unique creativity and imagination. Data privacy and ethical issues are another major challenge in the digital age. With the development of technology, the use of audience personal data in film marketing has become more and more common, raising concerns about privacy protection and bringing ethical disputes.

AI and robot technology are increasingly important in film marketing [10]. Their advantages are mainly reflected in improving publicity efficiency and accuracy and enhancing user interaction experience. Through AI technology, film marketers can accurately target the audience and automatically place advertisements according to their interests and behavior habits. This not only saves a lot of manpower and time costs but also improves the advertising placement effect. In addition, AI-driven virtual assistants and robot technology can provide audiences personalized services, such as recommending movies according to user preferences, answering questions, and even providing emotional interaction. These all greatly enhance the audience's sense of participation and loyalty.

The extensive application of AI and robot technology also brings some issues worthy of attention. Although AI performs well in data processing and pattern recognition, it still has obvious deficiencies in creative generation. The content generated by AI often depends on existing data and algorithms. It lacks the uniqueness and innovation in human artistic creation, which may lead to the homogenization of film publicity content. The use of AI technology also raises disputes about data privacy. Data analysis in film marketing usually requires a large amount of user information. Whether the collection and use of this information meet legal and ethical requirements is still unre-

solved.

The arrival of the digital age has brought huge film marketing opportunities and put forward new challenges. AI and robot technology have shown great potential in improving film publicity efficiency, accuracy, and interactivity, but their deficiencies in creativity, data privacy, and ethics cannot be ignored. In the future, how to fully utilize these technical advantages while avoiding their potential risks will be an important issue that the film marketing field needs to think deeply about and solve.

3. Case Analysis

3.1 Application of AI Technology in Film Advertising Placement: The Wandering Earth

As a science fiction blockbuster, "The Wandering Earth" fully uses AI technology to optimize advertising placement and data analysis in its marketing strategy. The film's publicity team uses AI technology to analyze the audience's hobbies, viewing history deeply, and social media behavior and accurately identify potential moviegoers. Based on these data, advertising placement can be highly personalized to ensure that advertisements are pushed to audiences most likely to be interested in the film at the right time and with the right content. This precise marketing strategy significantly improves the click-through rate of advertisements and audience participation, laying a solid foundation for the successful promotion of the film.

AI technology is also used to monitor and analyze advertising effects in real time and dynamically adjust advertising content and placement strategies according to audience feedback and market changes. For example, by analyzing social media comments and discussions, the film's publicity team can quickly capture audience emotional fluctuations and opinion changes and optimize subsequent marketing activities accordingly. This flexible and efficient marketing method enhances the film's market competitiveness and improves the overall viewing experience.

3.2 The Power of Social Media and Viral Transmission: Under One Person

In its marketing process, "Under One Person" fully utilizes the viral transmission potential of social media platforms and achieves remarkable publicity effects. The film's publicity team released many interesting short videos, stills, and behind-the-scenes footage on platforms such as Douyin. These contents attracted a lot of users' attention and sharing. The popularity of short videos not only helped the film quickly accumulate a wide audience base but also stimulated discussions and interactions among audiences, further expanding the influence of the film.

On this basis, the film's leading actors, Zhang Chulan and Feng Baobao, actively participate in social media interactions and communicate directly with fans. This direct interaction not only enhances the stickiness of fans but also forms a strong fan community. Fans actively share and discuss the film on social media and further promote the film by spontaneously creating related content (such as fan works, comments, short reviews, etc.). This communication mode based on fan interaction greatly enhances the exposure and popularity of the film.

Similarly, the social media marketing of "Under One Person" also faces challenges. For example, as more and more content is posted on social platforms, the problems of information overload and noise become increasingly obvious. The film's publicity information may sometimes be overwhelmed by other content, making it difficult to effectively reach the target audience. In addition, as social media algorithms are frequently adjusted, the film's publicity team needs to continuously adapt to the new communication environment to ensure that marketing information can maintain a high exposure rate.

4. Future Development Directions

4.1 Focus on Creativity and Personalization

In the future, film marketing should focus more on creativity and personalization. Although AI and robot technology perform excellently in improving efficiency and accuracy, the core of film marketing still lies in creativity and humanized expression. Therefore, film marketing teams should give full play to human creativity and avoid homogeneity caused by excessive reliance on technology. Through combination with technology, unique human thinking, and emotional expression can create more attractive and infectious publicity content to ensure that films stand out in the highly competitive market.

4.2 Strengthen Data Privacy and Ethical Protection

With the increasingly widespread application of AI and big data technology in film marketing, strengthening data privacy and ethical protection has become an issue that cannot be ignored. In the future, film marketing should ensure that the personal information of audiences is fully protected to avoid trust crises caused by data leakage or improper use. Marketing teams need to formulate and im-

plement strict privacy protection policies based on complying with relevant laws and regulations to safeguard the rights and interests of audiences and social responsibility.

4.3 Improve the Quality and Interactivity of Social Media Content

In terms of social media marketing, the future development direction should focus on improving content quality and interactivity. The characteristics of social media platforms determine the breadth and immediacy of information dissemination, but this also brings problems of information overload and noise. Marketing teams should attract and maintain the audience's attention by creating high-quality and original content. At the same time, active user interaction can enhance the audience's sense of participation, promote word-of-mouth dissemination and community building of films, and thereby improve the dissemination effect of information.

5. Conclusion

With the development of the digital age, AI, robot technology, and social media are playing an increasingly important role in film marketing. They have significantly improved the accuracy, efficiency, personalization, and interactivity of film marketing, enabling films to establish better connections with the audience and improve market performance. However, the extensive application of these technologies also brings challenges such as lack of creativity, homogeneity, data privacy, ethical issues, content overload, information noise, negative word-of-mouth dissemination, and platform algorithm changes.

Although AI and robot technology have shown great potential in improving film publicity effects, they cannot completely replace human creativity and emotional expression. In the future, film marketing should make full use of these technical advantages while emphasizing creativity and human factors to ensure that film marketing content can move the audience and establish deep emotional connections. With the continuous progress of technology, film marketing will face new opportunities and challenges. How to maintain the advanced nature of technology applications while protecting audiences' rights, interests, and privacy in the rapidly changing digital environment will be an issue that film marketing teams need to pay long-term attention to. This also provides a rich exploration direction for future research. It is expected that through diversified research methods in the future, the profound impact of digital technology on film marketing can be further revealed.

References

[1] Sickels R C. American film in the digital age. Bloomsbury Publishing USA, 2010.

[2] Grewal D, Hulland J, Kopalle P K, et al. The future of technology and marketing: A multidisciplinary perspective. Journal of the Academy of Marketing Science, 2020, 48: 1-8.

[3] Gao B, Wang Y, Xie H, et al. Artificial intelligence in advertising: advancements, challenges, and ethical considerations in targeting, personalization, content creation, and ad optimization. Sage Open, 2023, 13(4): 21582440231210759.

[4] M. Bala, D. Verma. A Critical Review of Digital Marketing. International Journal of Management, IT & Engineering, 2018, 8(10): 321-339.

[5] Huang M H, Rust R T. A strategic framework for artificial intelligence in marketing. Journal of the Academy of Marketing Science, 2021, 49: 30-50.

[6] Chintalapati S, Pandey S K. Artificial intelligence in marketing: A systematic literature review. International Journal of Market Research, 2022, 64(1): 38-68.

[7] Dwivedi Y K, Hughes L, Ismagilova E, et al. Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice, and policy. International journal of information management, 2021, 57: 101994.

[8] Kerrigan F. Film marketing. Routledge, 2017.

[9] Liao X, Cao P. Digital media entertainment technology based on artificial intelligence robots in art teaching simulation. Entertainment Computing, 2025, 52: 100792.

[10] Bogue R. The role of robots in entertainment. Industrial Robot: the international journal of robotics research and application, 2022, 49(4): 667-671.