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AI & Entertainment: The Revolution of Customer Experience

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Abstract: This research paper analyzes the impact of artificial intelligence (AI) in shaping customer experience by revolutionizing the entertainment industry. AI evidently has been one of the key driving forces of the fourth industrial revolution, transforming various domains, notably entertainment. Subsequently, the paper conveys that the application of AI could be either direct or indirect through human computer interaction and enhancement of user experience in entertainment respectively. The primary qualities of AI examined are computer vision (virtual reality and games), natural language processing (chatbots and voice assistants) and personalized recommendations through algorithms. The results of the analysis discover that AI has, in fact, enriched user experience in terms of entertainment, delivering greater convenience and augmented engagement for each individual user. However, like in many other industries, AI has displayed some limitations and challenges to be resolved, which negatively impact user experience in their pursuit for entertainment, despite its tremendous potential to further revolutionize the entertainment industry.

Keywords: artificial intelligence, customer experience, entertainment

1. Introduction

In the past few decades, there has been substantial progress in the field of artificial intelligence (AI). AI is widely utilized throughout several domains, although there exists a general lack of awareness among individuals regarding its exact mechanisms and application areas. Nonetheless, it is important to recognize that AI's influence permeates people's surroundings, making it a prevailing force in numerous contexts. Automated AI has emerged as a crucial element in multiple realms, encompassing virtual assistant, video production, gaming development, and other related fields. The entertainment business is currently experiencing a significant adoption of AI technologies. Computer vision and natural language processing (NLP) are two subfields of AI that are extensively manipulated with the same overarching objective: teaching computers to recognize, comprehend, and even create human-like language.

AI technology engages with humans directly and indirectly. One concrete illustration of human-AI interaction can be the utilization of chatbot. It offers advantages in terms of service improvement and customer engagement, as it enables personalized interactions with customers without the need for human agents. The utilization of voice assistant has also granted substantial benefits and transformative effects on people's life, enabling the reception of voice-activated commands and contribution to the enhancement of customer satisfaction. AI-based recommendation systems can

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serve as a representative illustration of indirect engagement. These algorithms are extensively employed to provide customers with personalized product suggestions. These recommendations are generated by analyzing browsing and purchase histories, preferences, and behavioral patterns of customers, subsequently providing relevant product recommendations.

The substantial implementation of AI technology not only enhances the efficiency of the whole workflow of industries, leading to improved and productive outcomes, but has also captivated consumers and audiences through immersive and thrilling experiences in the entertainment industry. Consequently, AI is proving itself a driving force in revolutionizing the entertainment industry. This paper hence seeks to analyze and highlight key insights of AI in entertainment, while cross-examining challenges and limitations of AI to be overcome in order for AI to maximize its potential in augmenting user satisfaction and experience in entertainment.

2. Customer Experience of AI Technologies in the Media & Entertainment Sector

2.1. Direct Interaction: Natural Language Processing (NLP)

NLP is a subfield of AI that focuses on endowing computers with the capability to comprehend and interpret written and spoken language, similar to the cognitive abilities of human beings. In contemporary society, people are encompassed by numerous products that are enhanced by artificial intelligence (AI), serving to a range of purposes, including but not limited to speech recognition, chatbots, automated generation, and language translation.

2.1.1. Chatbot

A chatbot refers to a computer software program designed to imitate and analyze human interaction. Chatbots facilitate human-computer interaction by allowing individuals to engage with digital gadgets in a manner akin to their interactions with human counterparts. With the growing amount of social media usage among customers, it has become increasingly common for businesses to make use of chatbots as a tool for customer service on these platforms. They are designed to respond to consumer inquiries independently and deliver affirmative answers. Customer support queries can be promptly sent to the most suitable agent or department. The implementation of this measure has the potential to decrease the duration of customers' waiting periods, hence fostering the provision of efficient and individualized customer care all the time.

Nevertheless, the occurrence of AI hallucination is frequently observed when customers pose inquiries, resulting from the AI model generating inaccurate information. The emergence of this AI-powered chatbot and its growing prominence has sparked a considerable amount of discourse on social media platforms regarding the potential for addressing AI hallucinations in chatbot systems, a difficulty encountered by every business and institution. Despite the apparent proficiency of artificial intelligence (AI) in language and logical reasoning, these systems are susceptible to experiencing hallucinations due to their fundamentally distinct connection with reality compared to human beings, particularly in terms of reasoning and social capabilities [1, 2]. In the study conducted by Abigail S. et al., it is evident that there exists a notable positive association between various categories of customer dissatisfaction and chatbot errors [1].

Although chatbots undeniably improve convenience in many facets of people’s lives, it is noteworthy that AI hallucination can yield outcomes that are contrary to customer's desired objective of obtaining expedited and efficient service. This occurrence leads to customer perplexity, resulting in heightened levels of discontent and prolonged waiting periods for a real human to speak with. Currently, researchers are actively involved in continuous efforts to address and resolve these problems.

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2.1.2. Voice Assistant

Voice assistants powered by AI voice recognition technology routinely demonstrate the ability to offer optimal answers across a range of scenarios, such as obtaining weather information, setting alarms, sending messages, identifying random music, or engaging in conversation in the absence of other humans.

In recent years, there has been a quick and broad adoption of virtual voice assistants such as Siri, Alexa, and Google Assistant. The advent of AI-enhanced digital assistants has significantly transformed human interactions with electronic devices, enabling us to effortlessly communicate with them through voice-based instructions. For example, Alexa, a voice service technology developed by Amazon, is a multifunctional tool utilized in various applications such as smart displays, smart home devices, music streaming, and commerce, among others. Once the Alexa device has been configured, it can be utilized and commanded by customers without any requirement for a particular language [3]. The device in concern possesses a high level of user-friendliness, such that it can be operated without the need for any specialized training [3]. Upon receiving voice orders, the virtual assistant Alexa is capable of promptly initiating the playback of music [3]. Hence, voice assistants offer diverse forms of support, becoming increasingly integrated into people's everyday lives. It offers significant advantages, particularly for individuals with disabilities. Additionally, it enables customers to engage with digital interfaces without the need for conventional input methods such as keyboards or touch screens.

Even so, Voice assistants possess certain limitations that can frustrate customers. In the context of English language acquisition, it is commonly observed that individuals who are not native speakers of English often exhibit a distinct foreign accent in their speech. Occasionally, the system may encounter difficulty comprehending the instructions and hence yield a divergent response. Moreover, consumer dissatisfaction may emerge due to server and internet-related problems. For Amazon Alexa, its responses can be particularly delayed in the event of server difficulties [3]. An irritated technical glitch will wipe out all the instructions, including the most recent ones [3]. Generally, the voice assistant has proven to be a highly successful innovation that offers effective and practical customer services. Researchers are currently focusing on enhancing the technology and optimizing its utilization for the benefit of customers.

2.2. Indirect Interaction: Application of AI Algorithm on Customer Experience

The subject of algorithms is often a topic of common discussion, with a significant number of individuals acknowledging their influence in daily life, although holding limited knowledge regarding their specific functionalities.

2.2.1. Personalized Services

A lot of people use different kinds of media, such as movies and music, to relax and alleviate their stresses. However, people always encounter difficulties when attempting to discover something new. The emergence of AI has facilitated the process of generating customized content, hence enhancing the efficiency and effectiveness in this regard. The idea of personalized services development aims to offer customers a more pertinent and captivating experience.

Netflix, a globally recognized video streaming service, serves as a remarkable example of how personalized recommendations on the homepage may significantly enhance the customer experience. The interface of Netflix is structured in a manner that consists of multiple rows of video content that are piled on top of each other [4]. Movies and TV series are categorized into distinct groups based on similarities [4]. Netflix also provides users with recommendations based on their viewing history and search activity, including presenting potential matches, and indicating the degree of compatibility

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with their previously watched content. Users can conveniently locate and access videos that coordinate with their specific video preferences, increasing engagement and enabling them to reduce the need to filter through irrelevant materials.

Although the advantages of AI-powered personalization are substantial, it is imperative to acknowledge the existence of some problems that users are conscious of. AI systems rely on a substantial amount of user data in order to provide personalized content. Comprehensive gathering of personal information may elicit privacy concerns among users, potentially leading to anxiety and uneasiness.

2.2.2. Computer Vision: Virtual Reality (VR) in Games

VR is a computer-generated simulation that aims to provide customers with an immersive experience by replicating the sensation of being present in a virtual environment. The Ultimate Display was proposed by famous computer scientist Ivan Sutherland in the late 1950s [5]. This groundbreaking notion envisioned creating a virtual environment that could be experienced using a Head-Mounted Display (HMD) and was so realistic that users couldn't tell it from reality. A VR headset with the capacity to generate realistic visual imagery, aural stimuli, and various other sensory experiences is essential. He created the first helmet display and a computer image driver-based head location and tracking system [5].

In order to facilitate a comprehensive interactive experience, virtual reality (VR) systems commonly necessitate the incorporation of a gyroscope-equipped apparatus to enable 360-degree interaction. These combined components aim to effectively imitate the physical presence of a user within a virtual world. From then on, the technology of virtual reality (VR) has experienced rapid growth with the emergence of VR games and other related productions. For instance, the utilization of VR technology has gained significant traction in the fields of imaging and filming due to a growing emphasis on the aesthetic appeal of visual forms [6]. It alters the conventional approach to the appreciation of visual aesthetics. This emerging technology has the potential to revolutionize the production, consumption, and distribution of traditional movies, hence enabling elevated immersion and scenario-driven sensory perception [7].

The inclusion of presence in VR gaming environment enhances the perception of realism. The capacity of presence to immerse an individual in an experience further contributes to a heightened emotional reaction. When VR game just came out, people were excited about this neoteric experience. Typically, individuals perceive VR as an advanced technology that offers captivating and innovative experiences. Moreover, there is a prevalent belief among many that VR platforms consistently elicit a greater sense of presence compared to PC platforms [8]. However, living in an era of information and technology explosion, people have higher standard and expectations for VR gaming experience. The level of satisfaction with VR games is not as great as anticipated. It has been found no statistically significant connection between gaming platform and game genre in terms of user experience [9]. This allowed the researchers to focus on each key influence separately [9].

In the study conducted by Elena K. et al., a larger sensation of presence was reported by individuals who had more extensive PC experiences than VR experiences, suggesting that the platform is not the determining factor [8]. This phenomenon could be attributed to the players' desire for increased control over the actions and decision-making processes within the game. Hence, the significance of player involvement in VR games is in the prevention of a meaningless experience where users have limited control over the game's content. On the contrary, game designs that offer enhanced immersion and greater control are highly favored.

Furthermore, it’s undoubtable that the game genre has a pivotal impact in shaping players' experiences. Different game genres prioritize different aspects of player engagement. It is evident that present VR technology is not without its flaws and limits. It suggested that players felt more immersed

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in the strategy game than in the racing game [9]. In response, scholars are actively involved in endeavors to enhance the level of immersion experienced by players within different contexts. Presently, there is a notable upsurge in the advancement of artificial intelligence, resulting in gamers demonstrating heightened perceptiveness within the virtual reality gaming milieu. The increasing prevalence of horror games in contemporary times has prompted scholars to recognize the significant role of audio as an integral and emotional aspect that guides players through the game [10].

The key focus in the development of horror games is in the enhancement of sound direction and distance. Because the primary objective is to immerse the player within a harrowing setting, facilitating the sense of intensified anxiety and adrenaline, while minimizing interruptions. The findings of the research indicate that the implementation of improving sound direction and distance can potentially enhance the level of immersion experienced by players when confronted with frightening situations. Consequently, individuals exhibit reduced fixation and reliance on visual cues for spatial orientation [10].

3. Challenges and Limitations

One major challenge, as stated previously, that AI needs to overcome is the hallucination effect. Presenting customers with irrelevant answers or replies, hallucination significantly hampers customer experience by triggering customer dissatisfaction. For example, if a customer asks for the top recommendations for horror movies, but the AI, instead, provides a list of comedy movies, this will result in a negative impression by the customer and may subsequently deter the customer from seeking AI assistance or using the streaming service in the future.

One of the key components of successful customer service is the degree of engagement granted to the customers. However, AI, especially chatbots and voice assistants, provides a limited outlook in this aspect since AI mimics human intelligence, but it cannot completely replace human interactions. The lack of interaction, in terms of empathy and speed, results in poor customer as frustrated customers want to be understood as much as possible and demand results in a timely fashion, which customer service agents have superiority over AI assistance in most cases.

Moreover, AI can generally only provide with a limited list of suggestions or solutions that best fit customer needs and expectations. Hence, it is very possible that the customers are either unsatisfied by the solutions presented by the AI or unable to find concrete solutions to the problem that they are encountering. Customers are then inconveniently forced to spend extra time in connecting with a human agent, who can comprehend and process their demands. This poor experience of customer service would only cause greater distress to customers, who would, in turn, lose interest in their pursuit for entertainment.

4. Conclusion

The significant impact of AI on the daily lives of individuals is pervasive within the entertainment and media sectors. AI technology is integrated into numerous everyday objects through computer vision, NLP, and algorithms in various forms, such as games, voice assistants and personalized recommendations respectively, that are powerful yet familiar to humans often without conscious awareness. There exists a prevailing tendency among individuals to underestimate the magnitude of the impact that AI technology has had on and will continue to revolutionize the daily lives of humans, which are characterized by AI's perpetual and continuous progress in mimicking human intelligence and subsequently shaping convenience and human computer interaction to significantly augment user experience in entertainment. As challenges and limitations of AI will eventually be overcome through technological advancement, pursuit for entertainment will unquestionably grow in concurrence with the maturity of AI in providing superior user experience.

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