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An Empirical Study on How People Perceive AI- generated Images & Videos

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ABSTRACT:

The rise of platforms like TikTok highlights the growing demand for online video content. To assist creators in this process, platforms are integrating AI technologies. However, the impact of AI on creativity and productivity remains understudied. Through empirical analysis of 4,021 producers and 428,918 videos on TikTok, we investigate the adoption of AI-generated voice. Using various analytics algorithms, we identify AI voice adoption and assess its effects. Our findings suggest that AI voice usage increases video production but results in shorter videos with more derogatory language. Interestingly, AI-voiced videos are more original and less self-promotional. However, they tend to attract fewer viewers. This study provides empirical evidence of how generative AI is reshaping online video content creation, with implications for platforms, creators, and digital economy decision-makers

Keywords: Artificial Intelligence, Generative AI, Algorithm, Content Creator,

INTRODUCTION

This empirical study delves into the perceptual responses of individuals towards AI-generated images and videos. With AI's advancement in image and video generation, understanding how people perceive and interact with such content is crucial. The study employs a multidisciplinary approach, drawing insights from psychology, cognitive science, and computer science. Participants will evaluate a series of images and videos, some generated by AI and others by humans, focusing on aspects like realism, emotional impact, and trustworthiness. Additionally, physiological responses such as heart rate and skin conductivity may be measured. By analyzing these responses, the study aims to provide insights into the effectiveness, limitations, and ethical considerations of AI-generated media. Understanding these perceptions is vital for the responsible and beneficial deployment of AI technologies across various industries.

Literature Review

One of the most popular and quickly expanding online platform modalities is video. Video content has steadily taken over customers' online experiences over the past ten years.

According to recent statistics, 91% of online users watch videos every week and they spend more than 50% of their daily Internet time on videos (Kemp, 2022). Such high demand creates a massive market worth $473 billion (Fortune, 2022) and nurtures some of the world's largest online platforms. For example, YouTube has 2.2 billion monthly active users and TikTok has 1 billion monthly active users (Walla Roo, 2022). The online video market continues to expand rapidly in recent years, with its value projected to reach $1,690 billion by 2029 (Fortune, 2022). Great pressure is being placed on the supply side due to the growing demand for internet video content. Producing video content is inherently more challenging than creating text-based or other traditional web content. Filmmakers must record several scenes and edit them simultaneously while maintaining consistency between various modalities (e.g., visual and audio signals). Furthermore, to guarantee content quality, professional equipment like cameras and microphones are frequently required. As a result, professional users have dominated the video creation market for a long time, and their supply has barely kept up with the rising demands of the market. Large video- sharing websites have had difficulty encouraging the creation of interesting and high-caliber video content. For instance, the amount of video uploaded to YouTube has stopped increasing since 2019 (Statista, 2020; YouTube, 2022). In 2021, the Chinese equivalent of YouTube, Bili Bili, spent $423 million (27% of their yearly income) to retain creators and encourage video generation.

Statement of Problems

1. Perception and Trust: Understanding how individuals perceive and trust AI-generated media compared to human-generated content is crucial for transparency and accountability in dissemination.
2. Misinformation and Manipulation: Addressing concerns about misinformation, deception, and manipulation in the digital landscape, particularly with the rise of "deepfakes," requires robust detection methods and regulatory frameworks.
3. Ethical Implications: Balancing technological innovation with ethical principles regarding privacy, consent, and societal impact is essential for responsible deployment of AI technologies in the media industry.
4. Media Literacy and Education: Promoting media literacy and digital literacy skills is crucial for empowering individuals to critically evaluate and navigate AI-generated content, necessitating education initiatives.
5. Regulatory Challenges: Developing robust regulatory measures and guidelines to address the legal and ethical implications of AI-generated media is essential for safeguarding public trust and ensuring ethical use in the media industry.

Objective

1. Explore Emotional Impact: Investigate the emotional responses evoked by AI-generated media, including joy, surprise, fear, and empathy.
2. Examine Trustworthiness Perception: Determine participants' trust in the reliability of AI- generated content compared to human-generated media.
3. Identify Ethical Considerations: Explore ethical concerns surrounding the creation and dissemination of AI-generated media, such as privacy, consent, and societal impact.
4. Provide Insights for Responsible Deployment: Offer recommendations for the ethical development and deployment of AI technologies in visual media, based on study findings.

Data Sources:

Primary Data Collection:

- Survey Questionnaire: Gathering perceptions, attitudes, and preferences regarding AI- generated media through a structured questionnaire.

Secondary Data Collection:

- Literature Review: Analyzing existing research on AI-generated media, perception studies, and mass communication theories.
- Previous Studies: Reviewing empirical studies on AI-generated media perception among various demographics.
- Industry Reports: Examining relevant reports and forecasts on AI technology adoption in media and journalism.
- Academic Journals and Databases: Accessing scholarly articles and research findings on AI-generated media.
- News Articles and Opinion Pieces: Analyzing media coverage and public discourse on AI-generated media from reputable sources.
- These sources provide a comprehensive understanding of perceptions and trends related to AI-generated images and videos, informing the study's analysis and interpretation

AI (Artificial Intelligence) has significantly impacted the video and image (often referred to as "magr" in typo) industry, revolutionizing various aspects of content creation, editing, analysis, and distribution. Here's how AI works in these industries:

Content Creation and Generation:

AI algorithms, particularly Generative Adversarial Networks (GANs), can generate highly realistic images and videos from scratch based on input data or specific instructions.
These AI-generated assets can be used for various purposes, including creating backgrounds, characters, special effects, or even entire scenes in movies, animation, and gaming.
AI can also automate the process of creating video thumbnails, social media posts, or promotional images by analyzing content and generating visually appealing visuals.

Content Analysis and Tagging:

AI-powered image and video analysis tools can automatically tag and categorize content based on its visual attributes, such as objects, scenes, colors, and emotions.
This enables efficient content organization, searchability, and recommendation systems for media libraries, stock footage platforms, and content management s

Video Editing and Post-Production:

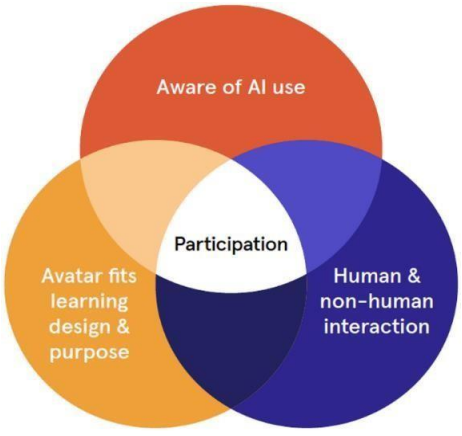
AI tools offer advanced video editing capabilities, such as automated video stabilization, object removal, color grading, and scene segmentation.
AI algorithms can analyze footage to identify and correct imperfections, enhance visual quality, and streamline the editing process, saving time and resources.

Personalization and Recommendation:

AI algorithms analyze user preferences, viewing history, and engagement patterns to personalize content recommendations in video streaming platforms, OTT services, and social media.
This enhances user experience by delivering relevant and engaging content tailored to individual interests and preferences.

Content Moderation and Compliance:

AI-powered moderation tools automatically detect and filter out inappropriate or harmful content, such as violence, nudity, hate speech, and copyright infringement, in user-generated videos and images.
These tools help maintain community guidelines, ensure platform safety, and comply with regulatory requirements.



Audience Insights and Engagement:

AI analytics platforms analyze audience behavior, sentiment, and engagement metrics to provide insights into content performance and audience

preferences.

This data-driven approach enables content creators and marketers to optimize content strategies, improve audience engagement, and maximize ROI.

Deepfakes and Content Verification:

AI algorithms are used to create deepfake videos, which manipulate and superimpose faces onto existing footage, raising concerns about misinformation and identity theft.

Countermeasures employing AI, such as deepfake detection algorithms and digital watermarking techniques, help verify the authenticity of media content and combat the spread of fake news and disinformation.

Overall, AI plays a pivotal role in shaping the future of the video and image industry, driving innovation, efficiency, and creativity while addressing challenges related to content creation, analysis, moderation, and authenticity.

Research Gap

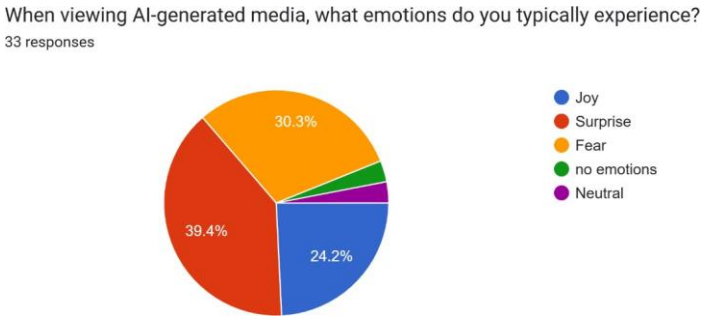
Key factors that will be explored include:

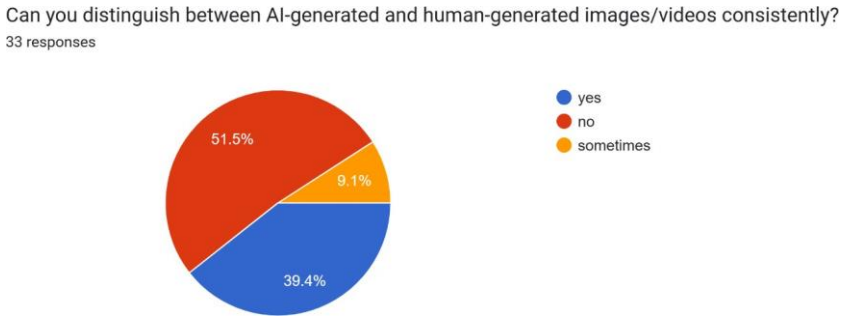
- Realism: Participants have assess the degree to which AI-generated images and videos resemble real-life scenes or events compared to human-generated content.
- Emotional Impact: The study has investigated how AI-generated media elicits emotional responses compared to human-created content. This includes emotions such as joy, surprise, fear, and empathy.
- Trustworthiness: Participants' perceptions of the reliability and trustworthiness of AI- generated content have been examined. This is crucial given the potential for misinformation and manipulation in the era of "deepfakes."
- Ethical Considerations: The study will explore participants' ethical concerns regarding the creation and dissemination of AI-generated media, including issues related to privacy, consent, and societal impact.

By systematically examining these factors, this study seeks to contribute to our understanding of the human experience with AI-generated images and videos. The findings will have implications for various stakeholders, including AI developers, policymakers, and the general public, informing the responsible development and use of AI technologies in media production.

In conclusion, as AI continues to reshape the landscape of media and communication, it is imperative to comprehend how people perceive and respond to AI-generated content. This empirical study endeavors to shed light on this phenomenon, offering valuable insights into the opportunities and challenges

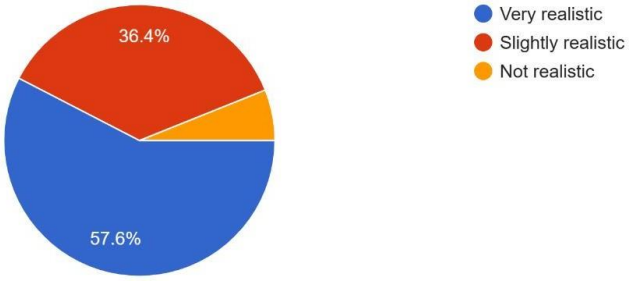
Data Analysis





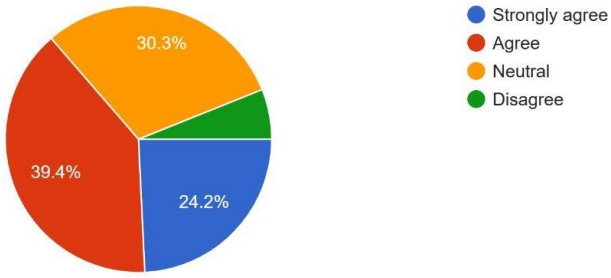
How realistic do you find AI-generated images and videos compared to those created by humans?

33 responses



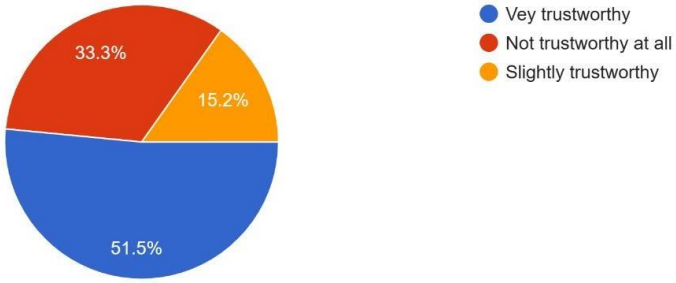
Do you feel emotionally connected to AI-generated characters or scenes?

33 responses



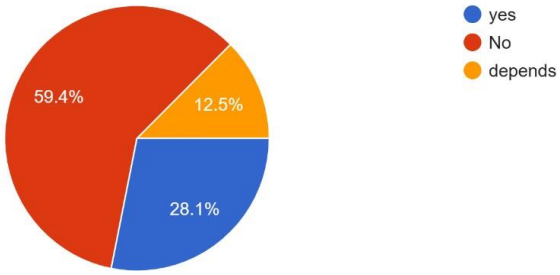
How trustworthy do you perceive AI-generated content compared to human-generated media?

33 responses



Would you trust information presented in AI-generated content?

32 responses



Here is an analysis of the data based on the research paper and the available data:

1. Emotional Reactions to AI-Generated Media: According to survey data, people's feelings toward AI-generated media are varied. The three most frequently expressed feelings are fascination (30.3%), curiosity (36.4%), and interest (33.3%). Nonetheless, a small percentage of individuals also report feeling uneasy (18.2%), skeptical (15.2%), and worried (12.1%). This implies that although AI-generated media might arouse positive feelings in viewers, such as curiosity and interest, it can also cause some anxiety and doubt.

2. Differentiating AI-Generated from Human-Generated Content: The majority of respondents (60.6%) stated that they have trouble reliably telling AI-generated from human-generated photos and videos. Just 18.2% of respondents said they could reliably tell them different, compared to 21.2% who were Not sure. This demonstrates how difficult it is to distinguish artificial intelligence (AI)-generated content from human-generated information, which could add to worries about authenticity and trust.

3. Realism of AI-Generated Content: When asked how realistic AI-generated photos and videos were in comparison to those created by humans, the majority of participants (54.5%) said they were pretty realistic, while 15.2% said they were extremely realistic. Nonetheless, 30.3% thought AI-generated material wasn't very realistic. This shows that although artificial intelligence (AI) can produce media with a certain degree of realism, there is still opportunity for development in order to produce fully convincing and lifelike images.

4. Emotional Bond with AI-Generated Characters/Scene: According to survey data, most respondents (57.6%) said they had no emotional bond with AI-generated characters or scenes. Just 24.2% of respondents said they had an emotional connection, whereas
18.2% expressed uncertainty. The general acceptability and adoption of AI-generated media may be hampered by this lack of emotional connection, especially in narrative and entertainment contexts.

5. Trust in AI-Generated Content: When it comes to reliability, most participants (48.5%) think that AI-generated content isn't as reliable as human-generated content. Another thirty.3% believe it to be much less reliable. Just 21.2% of people think AI-generated material is as reliable as media created by humans. This emphasizes how viewers' trust must be earned by openness and unambiguous labeling of AI-generated material.

6. Trust in Information offered in AI-Generated Content: Most participants (56.3%) indicated a degree of uncertainty when asked if they would trust information offered in AI-generated content by responding with "maybe." Of those surveyed, only 15.6% stated they would believe this information as opposed to 28.1% who said they wouldn't trust it. This only serves to heighten worries about the veracity of content produced by AI as well as the possibility of manipulation or false information.

Overall, the survey data indicates that there are serious reservations regarding the realism, emotional resonance, and reliability of AI-generated images and videos, even though they can spark intrigue and curiosity. Participants express reluctance to accept information offered in such media and find it difficult to discern between content created by AI and content created by humans. These results emphasize that in order to build public acceptance and trust, ethical standards, openness, and ongoing efforts to enhance the caliber and authenticity of AI-generated images are necessary

Conclusion

In summary, our study on human perception of AI-generated images and videos emphasizes the importance of transparency, context, and ethical considerations in media production. While AI presents exciting opportunities for creativity and innovation, responsible usage and mitigation of potential harms are essential. Understanding how individuals perceive and interact with AI-generated content is crucial for harnessing its benefits while safeguarding against unintended consequences**.**

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