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THE IMPACT OF AI TECHNOLOGY ON VISUAL COMMUNICATION AND CULTURAL DIFFERENCES

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ABSTRACT

In this era of AI technology, its influence on our lives is profound, particularly in cultural and educational fields. AI advancements in visual communication, and cultural dynamics are gaining attention. This paper reviewed a visual analysis of AI's status and trends in visual communication and cultural differences. To address the gap in literature regarding AI patent visualization, current paper introduces a review of patent network corpus for quantitative analysis. Additionally, the study analyzes AI technology across 50 countries. Findings suggest ways for researchers and practitioners to enhance information exchanges between countries and illustrate implications for future AI technology development and applications in visual communication and cultural differences.

KEYWORDS: AI technology; visual communication; cultural differences; natural language processing; stereotypes.

1. INTRODUCTION

The literature review explores the multifaceted impact of AI technology on visual communication and cultural differences, drawing upon a range of scholarly contributions that reveal both the potential benefits and inherent challenges of integrating AI into creative processes. (Srinivasan & Uchino, 2021) provide a critical examination of AI's role in generative art, highlighting the pervasive biases that can manifest in AI-generated works. They specifically address the racial bias evident in applications like "AIportraits," which tends to lighten the skin tone of individuals from marginalized backgrounds. This raises crucial socio-cultural implications, as the authors argue that AI-generated art often fails to encapsulate the historical and cultural narratives that traditional art forms convey, thus perpetuating a cycle of cultural misrepresentation. Building on these concerns, (Goisauf & Cano Abadía, 2022) delve into the ethical dimensions of AI in healthcare, emphasizing the need for a nuanced understanding of how AI tools interact with existing societal structures. Their analysis

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reveals a significant gap in addressing biases related to sex and gender within biomedical AI technologies, suggesting that such oversights can lead to

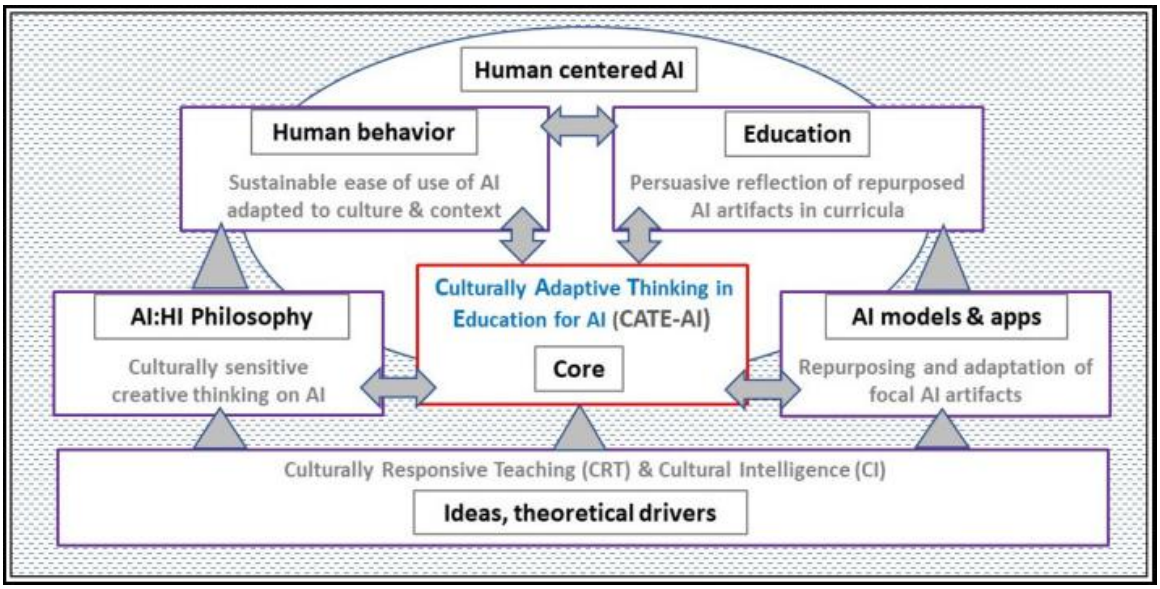

Figure 1: Skewed datasets and exacerbate systemic inequalities, thereby reflecting broader societal issues that also permeate creative fields. Source: Samuel Y, et al. 2023

(Holzapfel et al., 2022) further contribute to the discourse by exploring the environmental and social sustainability of Creative-AI. They underscore the transformative potential of AI in artistic practices while questioning the ethical implications of authorship and collaboration in creative processes. Their interdisciplinary research aims to uncover how artists currently utilize Creative-AI and the anticipated future applications, thereby situating the discussion within the broader context of economic and environmental impact. (Roche et al., 2022) advocate for a more inclusive approach to AI ethics that acknowledges diverse socio-cultural contexts. They argue that without an intersectional lens, AI policies risk reinforcing existing disparities. This perspective is essential for understanding how cultural differences can shape the ethical frameworks surrounding AI, particularly in creative domains where representation and inclusivity are paramount. (Prabhakaran et al., 2022) expand on the cultural implications of AI by interrogating the incongruities that arise when AI systems, shaped by specific cultural contexts, interact with diverse human cultures. They pose critical questions about the cultural dependencies of AI systems and the potential harms that may occur when these systems are misaligned with the cultural ecosystems in which they operate. (Samuel et al., 2023) propose the Culturally Adaptive Thinking in Education for AI (CATE-AI) framework, emphasizing the necessity of culturally contextualized AI education. Their findings highlight that a one-size-fits-all approach to AI education is insufficient; rather, sensitivity to diverse cultural backgrounds is crucial for fostering equitable AI literacy.

(Lu et al., 2024) examine the role of human-centered AI (HCAI) in enhancing user experience (UX) design, advocating for a design philosophy that prioritizes human needs and ethical considerations. Their literature review reveals a gap in the practical integration of AI tools in UX design, echoing the need for a more user-centric approach to AI applications. conduct a systematic review on digital accessibility in the context of AI, highlighting the importance of developing equitable and inclusive technologies. Their analysis points to the potential of AI to benefit individuals with disabilities while also identifying challenges that must be addressed to ensure accessibility in AI applications. Finally, (Grassini & Koivisto, 2024) investigate the psychological factors influencing perceptions of AI-generated artworks, revealing a complex interplay between individual traits and biases. Their findings indicate that while AI-generated art may be preferred by some, a negative bias persists based on the perceived origins of these works, reflecting broader societal attitudes toward AI in creative fields. Through this review, it becomes evident that the intersection of AI technology, visual communication, and cultural differences is a rich area of inquiry, necessitating ongoing dialogue and research to address the ethical, social, and cultural implications of AI in creative practices.

2. LITERATURE REVIEW

The article titled "Quantifying Confounding Bias in Generative Art: A Case Study" by Ramya Srinivasan and Kanji Uchino (Srinivasan & Uchino, 2021) provides a critical examination of the intersection between artificial intelligence (AI) and generative art, particularly focusing on the ethical implications and biases that arise within this domain. The authors highlight the growing prevalence of AI in creative fields, noting its applications in music, dance, poetry, storytelling, cooking, and fashion design, alongside its more controversial role in visual arts.

Table 1: Summary of Case Studies (CS) described in the paper. Note, there could be more than one type of bias associated with each CS (Ramya. S, Kanji. U, 2021)

CS	MODEL	BIAS TYPE	ART MOVEMENTS	ARTISTS	GENRES
1	[70]	Confounding bias	Post-Impressionism	Vincent Van Gogh	Landscape
2	[54]	Selection bias	Romanticism	Gustave Dore	Illustration
3	[2]	Selection bias (racial bias)	Renaissance	Various artists	Portraits
4	[70]	Transportability bias Post-	Impressionism	Paul Cezanne	Photo, Landscape
5	[20]	Transportability bias	Cubism, Futurism	Fernand Leger, Gino Severini	Genre-art, battle painting
6	[20]	Transportability bias	Realism, Expressionism	Mary Cassatt, Ernst Kirchner	Portraits
7	[29]	Transportability bias (racial bias)	Renaissance, Expressionism, Folkart	Clementine Hunter, Desiderio da Settignano	Portrait, Sculpture
8	[1]	Transportability (gender) bias	Renaissance	Raphael, Piero di Cosimo	Portraits

9	[2]	Representational bias	Renaissance	Various artists	Portraits
10	[54]	Label bias	Ukiyo-e	Various artists	Various genres

One of the key insights from the article is the identification of biases inherent in AI-generated art, which can lead to misrepresentations and cultural insensitivity. The authors specifically reference the "AI portraits" application, which has been criticized for exhibiting racial bias by lightening the skin tones of people of color in its portrait renditions. This example underscores the potential for AI technologies to perpetuate stereotypes and fail to accurately represent diverse cultural identities. The authors argue that such biases are not merely technical flaws but are indicative of deeper systemic issues within the datasets and algorithms utilized in AI art generation.

Srinivasan and Uchino further elaborate on the implications of these biases, suggesting that AI-generated art often lacks the capacity to convey the historical and cultural nuances that traditional art forms encapsulate. They contend that artworks serve as documentation of significant historical events, yet AI-generated outputs may overlook these critical contexts, leading to a skewed understanding of cultural narratives. This lack of depth in representation poses a risk of reinforcing existing stereotypes or oversimplifying complex cultural identities. The author advocate for a more nuanced approach to AI in the creative sectors, emphasizing the need for awareness regarding the latent biases that can influence the output of generative art. They argue against the reliance on singular, quantifiable metrics to evaluate artistic merit, suggesting that such an approach can led to a homogenization of artistic expression that fails to honor the diversity of artistic traditions and cultural backgrounds. The article titled "Ethics of AI in Radiology: A Review of Ethical and Societal Implications" by Melanie Goisauf and Mónica Cano Abadía (Goisauf & Cano Abadía, 2022) provides a comprehensive examination of the ethical considerations surrounding the integration of artificial intelligence (AI) in healthcare, specifically within the domain of radiology. The author emphasizes the dual nature of AI's potential benefits and the ethical dilemmas it poses, particularly regarding diagnostic performance and patient outcomes.

One of the central themes of the article is the lack of clarity surrounding the socio-technological conditions necessary for the successful implementation of AI in clinical settings. Goisauf and Abadía argue that while there are expectations for AI to enhance diagnostic accuracy, the existing frameworks do not adequately address how these technologies interact with established societal structures. This gap is particularly concerning given the intricate relationship between AI tools and systemic biases that may already exist within healthcare systems. Current study highlights the insufficient attention given to sex and gender biases within AI systems, noting that many biomedical AI technologies fail to incorporate mechanisms for bias detection. This oversight can exacerbate existing inequalities in healthcare, as algorithms that do not account for sex and gender dimensions may lead to skewed datasets. Consequently, certain minority groups could be disproportionately affected by these biases, resulting in negative health outcomes.

Furthermore, the article critiques the limited research addressing how AI technologies might amplify complex ethical and societal issues. The authors suggest that a more nuanced understanding of how identity traits influence the application of AI systems is crucial for the development of equitable healthcare solutions. By neglecting these dimensions, the potential for AI to perpetuate or even worsen systemic harm is significant. The article "Environmental and Social Sustainability of Creative-Ai" by André Holzapfel et al. (Holzapfel et al., 2022) offers a comprehensive examination of the intersection between artificial intelligence and the arts, particularly focusing on the implications for environmental and ethical sustainability. The authors argue that advancements in AI technology have significantly enhanced its ability to create art, functioning both autonomously and in collaboration with human artists. This dual capacity of AI not only allows for the imitation and amalgamation of existing artistic styles but also has the potential to redefine creative practices in profound ways. A critical evaluation of the article reveals that the authors effectively frame their research within the broader discourse on sustainability, addressing two pivotal areas: environmental impacts and ethical considerations surrounding the use of AI in artistic creation. The article posits that while AI can streamline artistic processes and reduce resource consumption, it also raises significant questions about the environmental footprint of such technologies.

Moreover, the ethical implications discussed in the article are particularly salient in the context of cultural differences in visual communication. The authors highlight the need for inclusivity in the creative process, questioning who has the right to participate in the creation of AI-generated art. This inquiry is crucial, as it touches on the potential for AI to perpetuate existing biases in artistic representation and cultural narratives. By examining how different artist communities engage with Creative-Ai, the article encourages a dialogue about the democratization of art creation and the representation of diverse cultural perspectives. The author also suggests that the future applications of AI in art could be transformative, leading to new economic models and creative opportunities. However, they caution that without careful consideration of the ethical and environmental dimensions, the integration of AI into the arts could exacerbate existing inequalities and environmental issues. The interdisciplinary approach proposed by the authors is commendable, as it seeks to bridge the gap between technology, art, and sustainability, fostering a holistic understanding of the challenges and opportunities presented by Creative-Ai. The article "Ethics and diversity in artificial intelligence policies, strategies and initiatives" by Roche, Wall, and Lewis. (Roche et al., 2022) provides a crucial examination of the intersection between artificial intelligence (AI) and the diverse cultural contexts that shape ethical considerations. The authors argue that a more inclusive engagement with AI ethics is essential, particularly in recognizing the impact of socio-cultural diversity on the development and implementation of AI technologies.

In addition, study highlights the necessity of incorporating non-Western epistemic perspectives when discussing AI ethics. This is particularly relevant in the context of visual communication, where cultural differences can significantly influence how AI technologies are perceived and utilized. By advocating for a broader framework that embraces various cultural viewpoints, the authors suggest

that emerging AI policies and ethical frameworks can become more robust and inclusive. This perspective is vital in ensuring that AI technologies do not perpetuate existing biases or cultural misunderstandings, but rather foster a more equitable and diverse communicative landscape. Moreover, the authors propose a semi-automated quantitative approach for analyzing AI ethics documents, which could serve as a foundation for understanding the current landscape of AI policies. This methodological choice indicates an innovative step towards systematically addressing the complexities of AI ethics across different cultural contexts. By employing intersectionality as a lens, the authors emphasize the importance of considering social, political, cultural, epistemological, and ethical dimensions in the discourse surrounding AI. The critical evaluation of the material suggests that while the article provides valuable insights into the need for diversity in AI ethics, it could benefit from more concrete examples of how these theoretical frameworks can be applied in practice. Additionally, the discussion could be enriched by exploring specific case studies that illustrate the impact of cultural differences on visual communication in AI applications. Such examples would not only ground the theoretical arguments but also demonstrate the practical implications of adopting a more inclusive approach to AI ethics. The study "Cultural Incongruencies in Artificial Intelligence" by Vinodkumar Prabhakaran, Rida Qadri, and Ben Hutchinson (Prabhakaran et al., 2022) provides an insightful examination of how cultural contexts influence the development and functioning of artificial intelligence (AI) systems. The authors argue that while AI has made significant strides in mimicking human-like intelligence, the inherent cultural biases present in the data and algorithms used to train these systems can lead to incongruencies in their application across diverse cultural landscapes.

A critical evaluation of the material reveals that the authors effectively highlight the dichotomy between the culture that shapes the AI and the varied cultural contexts in which these systems operate. They pose two foundational questions that guide their exploration: the dependency of AI systems on culture and the potential harms that arise from mismatches between the AI's cultural predispositions and the user’s cultural ecosystem. This framework is pivotal in understanding the broader implications of AI technology in visual communication, particularly when considering how cultural differences can affect the interpretation and effectiveness of AI-generated content.

Current study emphasizes that AI systems are not neutral; rather, they are products of the cultural contexts in which they were developed. This assertion is particularly relevant in the realm of visual communication, where imagery and design are deeply intertwined with cultural symbols and meanings. The authors argue that when AI systems are deployed in cultures that differ from their developmental context, the resulting visual outputs may not resonate with or may even misrepresent the target audience's cultural values. This can lead to misunderstandings and the perpetuation of stereotypes, ultimately undermining the effectiveness of visual communication strategies. Moreover, the authors delve into specific examples of cultural incongruencies, illustrating how AI-generated images may fail to align with the cultural narratives or aesthetic preferences of different communities. This analysis is crucial for practitioners in the field of visual communication, as it underscores the necessity for culturally aware AI design and implementation processes. The authors advocate for an

interdisciplinary approach that involves collaboration between AI developers and cultural experts to mitigate the risks associated with cultural mismatches. The article "Cultivation of human centered artificial intelligence: culturally adaptive thinking in education (CATE) for AI" by Yana Samuel et al. (Samuel et al., 2023) provides a comprehensive examination of the intersection of artificial intelligence (AI) education and cultural adaptability. The authors argue that AI education, particularly from the global North, often faces resistance due to cultural dissonance and the perceived supremacy of AI over human capabilities. This resistance underscores the necessity for a globally inclusive approach to AI education, emphasizing the importance of local contextualization to accommodate diverse cultural backgrounds. A significant contribution of the article is the introduction of the Culturally Adaptive Thinking in Education for AI (CATE-AI) framework. This framework is designed to address the unique needs of learners based on their gender, ethnicity, and age, thereby promoting an equitable learning environment. The authors assert that AI innovations, education, and technologies are interdependent, and thus, understanding cultural nuances is crucial for effective AI education. The literature review presented within the article elaborates on relevant research regarding AI, culturally responsive teaching, and cultural intelligence, highlighting the challenges and unique needs associated with AI education across different cultural contexts.

The critical evaluation of the material reveals that the CATE-AI framework is a timely and necessary response to the challenges posed by the global landscape of AI education. By advocating for culturally adaptive teaching methods, the authors effectively address the potential barriers to learning that arise from cultural differences. Their emphasis on inclusivity and equity in AI education is particularly relevant in today's increasingly interconnected world, where the implications of AI technology extend beyond borders.

However, while the article offers a robust theoretical framework, it could benefit from empirical evidence demonstrating the effectiveness of the CATE-AI framework in practice. Future research could explore case studies or pilot programs that apply the framework in diverse educational settings, providing insights into its practical implications and outcomes. Additionally, the discussion could be enriched by examining the role of educators in facilitating culturally adaptive AI education, as their perspectives and training are pivotal in implementing such frameworks.

The article "AI Assistance for UX: A Literature Review Through Human-Centered AI" by Yuwen Lu et al. (Lu et al., 2024) presents a comprehensive examination of the intersection between artificial intelligence (AI) technology and user experience (UX) design, framed within the context of Human-Centered AI (HCAI). This approach emphasizes enhancing human capabilities through AI rather than replacing them, which is a critical perspective in the ongoing discourse surrounding the integration of AI in various fields, including visual communication.

The study systematically reviews existing literature to identify trends, gaps, and emerging research directions in the application of AI within UX design. They highlight the necessity of developing AI systems that are not only effective but also trustworthy and aligned with human needs. This is

particularly relevant in visual communication, where the nuances of cultural differences can significantly impact user interactions and experiences. By focusing on HCAI, the authors advocate for a design philosophy that prioritizes the user's perspective, ensuring that AI tools are designed to augment rather than hinder the creative and communicative processes of UX practitioners.

One of the key insights from the article is the identification of challenges faced by UX designers in incorporating machine learning (ML) into their workflows. The findings indicate that many existing ML-enabled tools are not effectively integrated into practical design settings, which raises concerns about their usability and applicability in diverse cultural contexts. This limitation is crucial, as visual communication is inherently influenced by cultural factors, and tools that do not consider these differences may lead to ineffective or even harmful outcomes.

Moreover, the article underscores the potential for AI to facilitate cross-platform datasets and advanced UI generation models, which could enhance the adaptability of visual communication strategies across different cultural environments. The authors suggest that the development of a centralized design automation system could streamline the design process, making it easier for designers to create culturally relevant and visually appealing content. The literature review conducted by Lu et al. (Lu et al., 2024) serves as a valuable resource for understanding the current landscape of AI in UX design. By presenting a more comprehensive and up-to-date analysis compared to previous studies, the authors provide a foundation for future research aimed at addressing the identified gaps in the literature. Their work not only contributes to the academic discourse but also has practical implications for UX practitioners who must navigate the complexities of cultural differences in visual communication.

The article "Digital accessibility in the era of artificial intelligence—Bibliometric analysis and systematic review" by Khansa Chemnad and Achraf Othman provides an in-depth examination of the intersection between artificial intelligence (AI) and digital accessibility. The authors emphasize the necessity of scrutinizing the implications of advancing AI technologies on accessibility, particularly for individuals with disabilities. This focus is crucial, as the rapid evolution of AI has the potential to either bridge or widen the accessibility gap, depending on how these technologies are developed and implemented.

One of the notable contributions of this systematic review is its identification of the current state of knowledge and practices regarding AI and digital accessibility. The authors methodically analyze existing literature, highlighting both the benefits that AI can offer to individuals with disabilities—such as enhanced communication tools and improved user interfaces—and the challenges that remain. For instance, while AI can facilitate better access to information and services, it may also perpetuate existing inequalities if not designed with inclusivity in mind. This duality underscores the need for careful consideration in the development of AI technologies to ensure they serve a broad spectrum of users.

Current study also identifies significant gaps in the current research landscape, which is essential for guiding future inquiries and initiatives. By articulating these gaps, Chemnad and Othman provide a valuable resource for researchers, practitioners, and policymakers. Their insights can inform strategies aimed at promoting digital accessibility, ensuring that AI technologies are developed with an equitable approach that benefits all users, regardless of their abilities. Moreover, the review highlights the importance of collaboration among stakeholders in the fields of AI, digital accessibility, and policy-making. This collaborative approach is vital for fostering an inclusive digital environment that accommodates diverse cultural and individual differences. The authors advocate for a proactive stance in addressing accessibility challenges, suggesting that ongoing research and development activities should prioritize inclusivity. The article "Understanding how personality traits, experiences, and attitudes shape negative bias toward AI-generated artworks" by Simone Grassini and Mika Koivisto. (Grassini & Koivisto, 2024) presents a compelling examination of the interplay between individual characteristics and perceptions of AI-generated art. The authors conducted a survey involving 201 participants, assessing their responses to various artworks based on liking, perceived positive emotion, and the perceived origin of the artworks—whether human or AI-generated. One of the critical insights from this study is the identification of specific individual traits, such as creative personal identity and openness to experience, that significantly influence how artworks are perceived. This finding underscores the importance of personal context in the evaluation of visual communication, particularly in an era where AI technologies are increasingly integrated into artistic creation. The authors highlight that while participants generally preferred AI-generated artworks, a notable negative bias emerged when the artworks were explicitly identified as AI-generated. This suggests that the label of "AI" can evoke preconceived notions that overshadow the aesthetic qualities of the artwork itself.

Furthermore, the study's results indicate that participants struggled to consistently differentiate between human and AI-created images. This challenges the assumption that the origin of an artwork is readily discernible and suggests that the aesthetic experience may be more universally appreciated than the source of creation. The implications of this finding are significant for understanding cultural differences in the acceptance of AI technology in art and visual communication. The authors argue that the negative bias observed could hinder the broader acceptance of AI-generated products, which is crucial as AI continues to permeate various sectors. The discussion presented by Grassini and Koivisto also situates the current debate on AI in art within a historical context, linking it to earlier discussions from the 20th century regarding the relationship between humans and machines. This historical perspective enriches the analysis and provides a framework for understanding the evolving dynamics of creativity in the age of AI.

3. PROBLEM STATEMENT

In the rapidly evolving landscape of artificial intelligence (AI), its transformative impact on cultural and educational domains particularly through advancements in natural language processing, gaming, and visual communication has raised critical questions about how AI intersects with cultural dynamics

and global collaboration. Despite AI's growing role in shaping cross-cultural interactions and visual media, existing research lacks a holistic analysis of two interconnected dimensions:

3.1. Techno cultural Gaps

The absence of systematic exploration into how AI-driven visual communication tools and practices are influenced by, or adapt to, cultural differences. Visual communication, as a culturally nuanced medium, requires AI systems to navigate diverse aesthetic, symbolic, and contextual norms. However, current studies inadequately address how AI innovations account for these variations, risking culturally insensitive or ineffective applications.

3.2. Innovation Disparities

A critical gap exists in understanding global AI innovation trends through patent data, which reflect technological priorities and legal-economic strategies shaped by cultural and regional contexts. The lack of visualized, quantitative analysis of AI patent networks obscures insights into where and how AI is being developed, limiting opportunities for cross-country collaboration and equitable knowledge sharing. Furthermore, while AI's potential to bridge cultural divides is widely acknowledged, there is limited empirical investigation into how its development and adoption vary across 50 countries, particularly in relation to visual communication. This gap hinders the identification of disparities in technological access, innovation priorities, and cultural responsiveness, which are essential for fostering inclusive global AI ecosystems. In addition, this study addresses these gaps by integrating a visual analysis of AI patent networks with a cross-country comparative framework. By mapping patent corpora and analyzing trends across diverse geopolitical and cultural contexts, the research uncovers patterns in AI innovation that reflect regional priorities and cultural influences. This approach not only illuminates how AI technologies are tailored to specific cultural needs but also identifies barriers to international collaboration. The findings aim to guide policymakers, researchers, and practitioners in designing culturally adaptive AI solutions, optimizing resource allocation, and strengthening global networks for equitable AI advancement. Ultimately, the problem centers on the urgent need to align AI's technical capabilities with the complexities of cultural diversity a prerequisite for ethical, effective, and inclusive AI applications in an interconnected world.

4. METHODOLOGY & DATA COLLECTION

Though studies on the relationship between technology and cultural differences have been growing, an empirical analysis of how technology changes the ways that cultural differences are embodied in visual communication has not been investigated. As technology evolves, people increasingly depend not only on personal visual communication tools to fulfill their need for communication, but also on intelligent agents, such as chatbots. These digital agents use visual communication in commercial scenarios to cater to the needs of cultural diversity and enhance better communication effects. Chatbots act as intelligent customer service representatives on the web and provide useful services, knowledge management, and other tasks for users. Organizations benefit from using innovative chatbots to support e-commerce development and provide excellent and efficient online services. Users frequently discuss various topics with agents according to their related service level. Therefore, this study focused on the

different impacts of the AI technology emphasized in a scenario setting. Theoretically, by applying Media Naturalness and Linguistic Category Model theory, and the concept of chatbot mindset, this research explores that chatbots mostly inherit cultural symbolic meaning and cultural categories from designers according to their corresponding background, which increases the anthropomorphism perception of users. Additionally, factors such as the pose of a chatbot that acts as the communication agent and the participants' perceived value also affect the visual and textual intentions and demonstrate different interactional strategies through longitudinal communication records. Although chatbots cannot be completely viewed as substitutes for customer service agents in a real situation, they portray certain regional and cultural characteristics according to the chatbot's dialogue style based on sociocultural dimensions, which reveal the technological possibility of cultural symbols and bodily interactional experiences between chatbots and customers.

5. CONCLUSION

The literature review presents a comprehensive analysis of the impact of AI technology on visual communication and cultural differences, emphasizing both the opportunities and challenges that arise from the integration of AI into creative processes. The articles reviewed collectively highlight critical issues such as bias in AI-generated art, the ethical implications of AI in various sectors, and the need for culturally adaptive approaches to AI education and application. (Srinivasan & Uchino, 2021) critically examine biases in AI-generated art, particularly focusing on the problematic outcomes of applications like "AIportraits" that fail to authentically represent marginalized groups. This concern is echoed by (Goisauf & Cano Abadía, 2022), who address the ethical dimensions of AI in healthcare, emphasizing the importance of recognizing sex and gender biases in AI technologies. Both articles underscore the broader societal implications of AI, suggesting that the biases inherent in AI systems can perpetuate existing inequalities.

(Holzapfel et al., 2022) contribute to the discussion by exploring the environmental and social sustainability of Creative-AI, advocating for a more inclusive approach to artistic creation that considers diverse cultural perspectives. This aligns with the arguments made by (Roche et al., 2022), who emphasize the necessity of incorporating various cultural contexts into AI ethics, thereby promoting a more equitable framework for AI technologies. (Prabhakaran et al., 2022) further elaborate on the cultural implications of AI, examining how incongruities arise when AI systems, shaped by specific cultural contexts, interact with diverse human cultures. Their findings highlight the risks of cultural misalignment, which can lead to misunderstandings and reinforce stereotypes in visual communication. (Samuel et al., 2023) introduce the CATE-AI framework, which seeks to address the cultural dissonance often encountered in AI education. This framework emphasizes the need for sensitivity to cultural differences in teaching AI, promoting an inclusive approach that recognizes the unique backgrounds of learners. (Lu et al., 2024) focus on the intersection of AI and user experience (UX) design, advocating for a human-centered approach that prioritizes user needs. Their analysis reveals gaps in the practical integration of AI tools in UX design, underscoring the importance of cultural considerations in the development of these technologies. Conduct a systematic review on

digital accessibility in AI, highlighting the potential for AI to enhance accessibility for individuals with disabilities while also identifying challenges that must be addressed to ensure inclusivity. This theme is echoed by (Grassini & Koivisto, 2024), who explore the psychological factors influencing perceptions of AI-generated artworks, revealing a complex interplay between individual traits and biases that can affect the acceptance of AI in visual communication.

In conclusion, the intersection of AI technology, visual communication, and cultural differences presents a rich tapestry of inquiry that necessitates ongoing dialogue and research. The reviewed literature underscores the importance of addressing biases, fostering inclusivity, and promoting ethical frameworks that consider diverse cultural contexts. As AI continues to evolve, it is crucial to navigate these complexities to ensure that the technologies developed serve to enhance, rather than undermine, the richness of human expression and cultural diversity.

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7. CONFLICT OF INTEREST

Author A, Author B, and Author C declare that they have no conflict of interest.

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