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Beyond Human Authorship: Exploring Computational Creativity and Machine-Led Aesthetics

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ABSTRACT: The integration of artificial intelligence into artistic practice has transformed computational creativity into a dynamic field where human intuition and algorithmic processes converge. This narrative review examines how human–AI collaboration reshapes creativity, highlighting both opportunities and challenges. A systematic literature search was conducted across databases including Scopus, IEEE Xplore, Google Scholar, and the ACM Digital Library, using keywords such as "computational creativity," "generative art," and "human–machine collaboration." Inclusion criteria prioritized peer-reviewed studies from the last decade, with attention to both technical innovations and socio-cultural dimensions. Findings reveal that collaborative approaches between humans and AI yield more complex and innovative artistic outcomes, supported by techniques such as neural painting and generative music models. Empirical studies demonstrate increasing acceptance of AI-generated art, although biases remain, as audiences often perceive human-made works more favorably. Results also underscore the influence of individual expertise, social interactions, and technological infrastructure on creative processes. Cross-cultural comparisons highlight disparities, with greater acceptance and infrastructure in Europe and North America, contrasted with limited access and cultural ambivalence in developing regions. Discussion points to systemic factors, including policy and education, as critical determinants of adoption and trust. The review concludes that advancing computational creativity requires inclusive access to AI tools, public education to reduce skepticism, and multidimensional evaluation metrics. Future research should expand global perspectives and integrate psychological and cultural frameworks, ensuring equitable participation in the evolving landscape of AI-mediated art..

Keywords: Computational Creativity, Generative Art, Artificial Intelligence In Art, Human–AI Collaboration, Digital Culture, Creative Technologies.

INTRODUCTION

Over the past decade, computational creativity has undergone a profound transformation, particularly through the integration of human imagination and artificial intelligence (AI) in the

production of art. This global trend reflects the evolution of technology from a mere supportive tool to an active partner in artistic processes, shaping not only the final product but also the creative journey itself (Bhambri & Khang, 2024; Brown, 2021). Scholars have noted that this shift carries significant implications for how creativity is defined and valued, as machine-generated outputs increasingly demonstrate qualities of originality, aesthetic depth, and emotional resonance (Eldridge & Bown, 2018; Franceschelli & Musolesi, 2024). The growing intersection between human intuition and computational capability highlights the urgency of examining the conditions under which AI can act as a co-creator, particularly in fields where artistic expression is central.

The expanding role of AI in creative domains has been reinforced by technological progress and cultural recognition. For instance, the sale of "Edmond de Belamy," an AI-generated painting that fetched $432,500 at auction, underscored the growing legitimacy of generative algorithms within the art market (Goenaga, 2020). Such events point to the broader acceptance of AI as an agent capable of producing work deemed valuable in both aesthetic and economic terms. Furthermore, studies indicate that user interactions with AI in artistic creation shape public trust and societal acceptance of these tools, situating generative technologies at the heart of debates on innovation, cultural identity, and technological adoption (Sugiyama & Burke, 2025). These developments provide compelling evidence that computational creativity is not merely an experimental endeavor but a field with tangible cultural, social, and economic impact.

Beyond symbolic milestones, empirical evidence highlights the practical applications of AI in expanding artistic frontiers. Techniques such as the use of neural networks to translate electroencephalogram (EEG) signals into emotionally expressive paintings illustrate how art and neuroscience can be bridged through computational methods (Riccio et al., 2022). This convergence not only broadens the scope of creative practice but also raises questions about the potential of AI to support social and cognitive purposes, including education and cultural development (Cetinić & She, 2022). Such examples underline the dual promise and complexity of computational creativity: on the one hand, it can augment human expression in unprecedented ways; on the other, it introduces philosophical and ethical questions about agency, originality, and the role of machines in shaping human culture (Giorgetti, 2024).

Another noteworthy development lies in the alignment of computational creativity research with psychological theories of creativity. Integrating psychological frameworks with algorithmic methodologies provides opportunities to situate machine-led art within broader conceptions of human cognition and artistic production (DiPaola et al., 2018). Empirical findings suggest that positive orientations toward technology are correlated with higher trust and greater engagement in AI-generated art, further reinforcing the importance of user perceptions in shaping this field (Sugiyama & Burke, 2025). This interplay between human attitudes and technological capabilities calls for deeper inquiry into the socio-cognitive mechanisms that underlie machine-mediated artistic practices.

Despite these advances, the field continues to grapple with persistent challenges. One major issue concerns the inherent complexity of human–machine collaboration. Scholars argue that the creative process involves multidimensional interactions among psychological, artistic, and technological domains, which complicates efforts to theorize or model computational creativity in

holistic terms (DiPaola et al., 2018; Peeperkorn, 2022). While generative algorithms have demonstrated remarkable capacities for producing novel and complex artworks, questions remain regarding how these systems can complement, rather than merely replicate, human creativity (Franceschelli & Musolesi, 2024; Giorgetti, 2024). These concerns underscore the need for interdisciplinary frameworks capable of integrating perspectives from the arts, cognitive science, and computer science.

A second challenge lies in the evaluation of AI-generated artworks. Current assessment practices often rely heavily on subjective user judgments, which, while valuable, do not provide standardized or objective metrics for determining artistic quality or originality (Cádiz et al., 2021; Sugiyama & Burke, 2025). The absence of widely accepted evaluative frameworks hinders efforts to establish computational creativity as a robust field of inquiry and practice. Researchers emphasize that without reliable methodologies for measuring creativity, the risk of over- or underestimating the contributions of AI to artistic production remains significant. This gap reflects broader tensions within the discourse, where questions of authorship, authenticity, and value remain unresolved.

These challenges point to important gaps in the literature that demand attention. A critical shortcoming is the limited integration of computational creativity research with psychological theories of human creativity (DiPaola et al., 2018; Giorgetti, 2024). While substantial progress has been made in advancing algorithmic methods, there has been insufficient engagement with the psychological foundations of creative processes. Some studies have attempted to bridge this divide, yet comprehensive models that effectively integrate these perspectives remain scarce (DiPaola et al., 2018; Dwivedi & Mahanty, 2023). Similarly, computational creativity research has often overlooked the social dimensions of creativity, despite evidence that collaboration, communication, and context significantly shape artistic practices (Peeperkorn, 2022; Brown, 2021). Addressing these gaps is essential for constructing a more holistic and inclusive understanding of creativity in the age of AI.

Against this backdrop, the present review aims to address these gaps by systematically examining the intersection of human and machine creativity in artistic contexts. Specifically, the study seeks to investigate how interdisciplinary approaches that draw from psychology, art, and technology can deepen understanding of computational creativity. By doing so, it responds to the need for frameworks that go beyond technical demonstrations to engage with the cognitive, emotional, and cultural dimensions of art-making (DiPaola et al., 2018). The review also aims to highlight how these interdisciplinary insights can contribute to more meaningful evaluation metrics, fostering a clearer understanding of what constitutes creativity in human–AI collaboration (Cádiz et al., 2021; Sugiyama & Burke, 2025).

The scope of this review reflects the uneven distribution of research across geographical and cultural contexts. Much of the existing scholarship has been concentrated in technologically advanced regions such as North America and Europe, where significant investments have facilitated experimentation at the intersection of art and AI (Dwivedi & Mahanty, 2023; Giorgetti, 2024). By contrast, studies focusing on developing regions or culturally diverse populations remain limited, creating a partial and potentially biased view of how AI-mediated creativity is experienced globally. This imbalance raises important questions about the universality of current findings and

underscores the necessity of incorporating perspectives from underrepresented contexts (Cetinić & She, 2022). Expanding the geographical and cultural scope of research can shed light on how different social and cultural backgrounds influence the adoption, perception, and practice of computational creativity (Brown, 2021; Eldridge & Bown, 2018).

In addressing these issues, the present study seeks to make a contribution that is both theoretical and practical. Theoretically, it endeavors to clarify the relationships between human cognition, emotional experience, and algorithmic processes in creative production. Practically, it aims to inform the development of evaluation methods, collaborative practices, and policy frameworks that can support the responsible and inclusive integration of AI in artistic domains. By situating its analysis within a global and interdisciplinary perspective, this review aspires to enrich ongoing debates and provide a foundation for future scholarship on computational creativity in the digital age.

METHOD

The methodology of this review was designed to ensure a rigorous and comprehensive analysis of literature concerning computational creativity and generative art, with a particular focus on human–AI collaboration in creative processes. A systematic approach was employed to gather, evaluate, and synthesize relevant studies across multiple academic fields, including computer science, psychology, media studies, and the arts. This integrative strategy enabled a balanced exploration of both technical and cultural dimensions of computational creativity.

The literature search was conducted across several leading academic databases known for their relevance to interdisciplinary research. Scopus was chosen as a primary database given its extensive coverage of peer-reviewed journals and conference proceedings, particularly in science, technology, and social sciences. IEEE Xplore was included to capture engineering-oriented research, focusing on hardware, software, and algorithmic developments underlying computational creativity (Cetinić & She, 2022). To broaden the scope beyond technical studies, Google Scholar was utilized as a complementary source, enabling access to diverse materials such as book chapters, dissertations, and interdisciplinary articles relevant to psychological and cultural aspects of creativity (DiPaola et al., 2018; Żylińska, 2023). Finally, the ACM Digital Library was searched to include research outputs specifically targeting human–computer interaction and computational aesthetics, thereby strengthening the review's interdisciplinary reach.

The search strategy relied on carefully selected keywords and Boolean operators to ensure that the widest range of relevant studies could be identified while maintaining precision. Primary keywords included "computational creativity," "AI in art," "generative art," "neural networks for art creation," "machine-led aesthetics," and "human–machine collaboration." Boolean connectors such as "AND," "OR," and "NOT" were employed to refine results. For example, the query ("computational creativity" OR "AI-generated art") AND ("human collaboration" OR "interactive systems") was particularly effective in capturing literature that addressed both technical and human-centered aspects of generative art (Peruzzo et al., 2023; Franceschelli &

Musolesi, 2024). Synonyms and variations of terms were systematically incorporated to avoid overlooking relevant material, such as "artificial intelligence" for "AI," "generative models" as an alternative to "generative art," and "creativity" to capture psychological dimensions (al-Rifaie et al., 2017; Sugiyama & Burke, 2025). This multi-pronged approach allowed for a comprehensive capture of both theoretical and applied research.

To ensure methodological rigor, the review incorporated a clear set of inclusion and exclusion criteria. Only studies published in peer-reviewed journals, conference proceedings, or scholarly books were included to guarantee academic reliability. Priority was given to works published within the last ten years to capture contemporary debates and technological advancements, although earlier foundational studies were retained when they contributed essential theoretical perspectives. Articles were included if they directly addressed computational creativity, generative art, or human–AI collaboration in creative practices. Excluded from the dataset were studies that solely focused on unrelated fields such as AI in industrial automation, or those that did not include discussions on creativity, aesthetics, or human factors. Non-English publications and materials lacking full-text availability were also excluded, as these constraints could compromise the consistency and accessibility of the review.

The selection process unfolded in several stages. Initial searches generated a large pool of publications, which were then screened through title and abstract reviews to eliminate irrelevant studies. This was followed by full-text evaluation of potentially eligible articles to assess their alignment with the review's research questions. The metadata and filtering options available within each database were utilized to refine searches, restricting results to peer-reviewed publications and excluding duplicates. At this stage, bibliographic information such as publication year, research field, and keywords was recorded to facilitate systematic organization of the dataset. References within selected articles were also manually reviewed to identify additional studies not captured by the initial search queries, thereby strengthening the comprehensiveness of the review.

The review considered a wide variety of study designs, reflecting the interdisciplinary nature of computational creativity. Technical contributions included experimental studies that developed or tested generative algorithms, such as neural networks, evolutionary algorithms, and diffusion models. These works often provided empirical performance evaluations or aesthetic quality assessments of generated artworks. Alongside technical research, case studies and qualitative investigations were included, particularly those that examined human engagement with AI tools in artistic contexts. Studies from psychology and media studies were incorporated to provide insights into user perceptions, trust, and cultural reception of AI-generated art (Peeperkorn, 2022; Deshpande & Purwar, 2019). This methodological inclusivity ensured that the review could address both the computational mechanisms driving creativity and the broader human, social, and cultural dynamics at play.

To evaluate the quality and relevance of included studies, a multi-step assessment procedure was applied. First, studies were appraised for methodological transparency, including clear descriptions of algorithms, experimental setups, or qualitative procedures. Second, the credibility of data and findings was assessed by considering factors such as sample size, robustness of statistical analysis, or depth of qualitative engagement. Third, the significance of contributions was determined by

examining how each study advanced understanding of computational creativity, whether through theoretical innovation, technical development, or cultural analysis. These evaluative steps enabled the identification of key themes and ensured that the synthesis was built on robust and reliable evidence.

In synthesizing the literature, thematic coding was employed to organize findings into coherent categories. Themes included technical innovation in generative algorithms, human–AI collaboration in creative processes, psychological dimensions of creativity, and cultural or ethical implications of computational art. This process allowed for the systematic identification of patterns, convergences, and divergences across disciplines. The coding framework was refined iteratively as new insights emerged, ensuring that the synthesis accurately reflected the diversity of perspectives captured in the review. Where appropriate, comparisons were drawn between findings from different geographical or cultural contexts, highlighting both universal and context-specific aspects of computational creativity.

Overall, this methodological framework combined systematic search strategies, rigorous inclusion criteria, and thematic synthesis to provide a comprehensive and interdisciplinary account of computational creativity in the context of generative art. By integrating technical, psychological, and cultural perspectives, the review aimed to move beyond narrow disciplinary boundaries and offer a holistic understanding of the field. This approach ensured not only the reliability of the findings but also their relevance to a wide range of stakeholders, from computer scientists and artists to educators and cultural theorists.

RESULT AND DISCUSSION

The analysis of literature on computational creativity and generative art revealed several consistent patterns and emergent themes that provide insights into the evolving relationship between human creativity and artificial intelligence. Across studies, the recurring theme was the centrality of collaboration between humans and AI systems in artistic production. This finding underscores the idea that computational creativity does not operate in isolation but instead emerges through dynamic exchanges between human intuition, artistic vision, and algorithmic processes. Research has repeatedly shown that collaborative approaches enrich not only the outcomes but also the creative experience itself, often producing works of greater complexity and innovation than those achieved by humans or machines alone (Bhambri & Khang, 2024). The development of methods such as Neural Painting, which uses parameterized brushstroke representations, further demonstrates how technological advances can approximate human conceptualization of art, allowing for deeper integration between artistic sensibilities and algorithmic structures (Peruzzo et al., 2023).

Another consistent theme concerned the evaluation of AI-generated artworks, which continues to pose challenges for both scholars and practitioners. Much of the literature emphasizes the reliance on subjective judgments in assessing creative outputs, with approaches ranging from personal artistic evaluations to more structured techniques such as the Modified Turing Test. These methods attempt to determine whether human observers can reliably distinguish between works

created by humans and those produced by AI (Ragot et al., 2020). The findings suggest that audiences are increasingly receptive to AI-generated art, reflecting a shift in cultural attitudes that validates the artistic legitimacy of machine-made works (Sugiyama & Burke, 2025). The evidence also indicates that AI is not merely tolerated but, in many cases, welcomed as a partner in creativity, further reinforcing the significance of this technological integration.

Empirical studies provide strong support for these themes. For example, in a survey involving 112 respondents, researchers found a direct correlation between positive orientations toward technology and greater trust in generative AI as a tool for artistic creation (Sugiyama & Burke, 2025). Such data highlight the role of technological literacy and cultural openness in shaping acceptance of computational creativity. At the same time, high-profile events such as the sale of "Edmond de Belamy" for $432,500 serve as powerful indicators of the economic and symbolic value of AI-generated art in global markets (Goenaga, 2020). These findings demonstrate not only the growing visibility of AI in the art world but also the complex interplay of social perception, commercial viability, and technological innovation that underpins this field.

The role of AI extends beyond visual arts into other domains such as generative music, where computational systems have been shown to produce outputs recognized as creative by human evaluators (Cádiz et al., 2021). Studies in this area illustrate the potential of AI to create emotionally resonant and structurally complex musical works, thereby expanding the horizons of computational creativity. This aligns with broader interdisciplinary discussions that emphasize the need to integrate psychological perspectives into the study of machine-mediated creativity (DiPaola et al., 2018). Collectively, these findings suggest that computational creativity is as much a cultural and psychological phenomenon as it is a technical one.

When analyzing the specific factors influencing outcomes in computational creativity, three primary categories emerged: individual, social, and technological. At the individual level, expertise in both technology and art was found to significantly shape how people engage with and evaluate AI-generated works. Studies show that individuals with greater technical knowledge and artistic training are better able to critically assess and appreciate AI-generated art (Cádiz et al., 2021; DiPaola et al., 2018). Sugiyama and Burke (2025) further demonstrated that higher levels of expertise correlate with stronger trust in AI outputs, indicating that technical competence can serve as a moderating factor in acceptance of generative art. These findings emphasize the importance of user background and knowledge in shaping perceptions of machine creativity.

At the social level, cultural and interpersonal dynamics were shown to play a pivotal role. Peeperkorn (2022) highlighted the significance of collaboration and communication in fostering what has been termed Computational Social Creativity (CSC), a subfield that emphasizes collective creativity mediated by AI. Such work indicates that creativity does not emerge solely from individual efforts but is deeply influenced by social contexts and interactions. These insights broaden the understanding of computational creativity by situating it within networks of collaboration and shared meaning-making, rather than framing it as a purely individual pursuit.

From the technological perspective, advances in AI and generative algorithms continue to shape artistic practices. The development of adaptive systems like Neural Painting illustrates how algorithmic tools can mirror human artistic processes, providing users with greater control and more intuitive engagement with machine-generated outputs (Peruzzo et al., 2023). Similarly,

Deshpande and Purwar (2019) argue that improvements in algorithmic design enhance user agency by offering more flexible and responsive tools, thereby enriching the quality and diversity of creative outcomes. These findings highlight the role of technological innovation not only as a driver of computational creativity but also as a mediator of human experience in artistic production.

A global perspective further reveals that responses to AI-generated art vary considerably across regions, reflecting cultural and infrastructural differences. In technologically advanced contexts such as the United States and Europe, AI-generated artworks have been more readily embraced, both culturally and commercially. The acceptance of works like "Edmond de Belamy" exemplifies this openness and indicates a willingness to integrate AI into established art markets (Goenaga, 2020). By contrast, studies suggest that in many developing regions, limited access to technology and insufficient infrastructure constrain the adoption of AI in creative practices, perpetuating disparities in exposure and participation (DiPaola et al., 2018; Żylińska, 2023). These findings raise important questions about equity and inclusivity in the global diffusion of computational creativity.

Further evidence from Europe indicates that collaborative projects between artists and AI systems are often perceived positively, with participants reporting enriched experiences and innovative outputs. However, contrasting findings from parts of Asia suggest that cultural shifts and differing aesthetic traditions may introduce uncertainty or ambivalence toward AI-generated art (Sugiyama & Burke, 2025). Chia (2022) notes that such variations underscore the importance of situating computational creativity within specific cultural frameworks, as the meaning and value of machine-generated art cannot be universally assumed. Instead, local traditions, cultural narratives, and societal attitudes shape the ways in which AI is integrated into artistic practice.

Taken together, the findings highlight that computational creativity is shaped by a complex interplay of individual expertise, social dynamics, technological advancements, and cultural contexts. The evidence points to a rapidly evolving field in which human–machine collaboration is increasingly normalized, subjective evaluation remains central, and psychological and social dimensions are as critical as technical ones. While the global trajectory of computational creativity reflects growing acceptance and commercial recognition, disparities in access and cultural reception reveal the need for a more nuanced and inclusive understanding of how AI-mediated creativity unfolds across diverse contexts (Kowaliw et al., 2011; Eldridge & Bown, 2018). This comprehensive view of results not only underscores the richness of current scholarship but also lays the groundwork for further investigation into the systemic, cultural, and methodological challenges that continue to shape the field.

The findings of this review provide important insights into the role of computational creativity and the growing involvement of artificial intelligence in artistic production, underscoring both the opportunities and challenges that emerge from this evolving field. Central to the discussion is the consistency with which human–AI collaboration has been shown to enhance creative processes and outcomes. This aligns with the work of Cetinić and She (2022), who emphasized that creativity flourishes when human intuition and algorithmic capabilities are combined, producing outputs that challenge traditional conceptions of authorship and originality. Such synergy suggests that the boundaries of human creativity are being redefined, not diminished, by the integration of computational tools.

Nevertheless, the reception of AI-generated art remains ambivalent, particularly when compared with traditional human-produced works. Ragot et al. (2020) demonstrated that audiences often perceive human-created art more positively, pointing to enduring biases about the origin of creativity. This divergence in reception highlights a critical tension: while AI expands the range of artistic possibilities, public trust and acceptance are still shaped by deeply ingrained cultural narratives that privilege human authorship. The persistence of these biases complicates the broader acceptance of AI-mediated creativity and underscores the need for strategies that foster greater understanding and appreciation of machine-assisted art.

Systemic factors play a substantial role in shaping these dynamics. National policies regarding investment in artificial intelligence and cultural innovation determine the extent to which human–AI collaborations can thrive. For example, in regions such as the United States and Europe, where governmental and institutional support for AI research is substantial, opportunities for integrating technology into artistic practice are more readily available (Cetinić & She, 2022). In contrast, in contexts where funding and infrastructure are limited, artists may face significant barriers to accessing the necessary tools and expertise, thereby restricting the potential of computational creativity. These disparities point to systemic inequities that influence not only the distribution of technological resources but also the capacity for cultural participation in the digital era.

Cultural attitudes further shape the trajectory of computational creativity. Cádiz et al. (2021) highlighted how certain societies view AI in art as a betrayal of human imagination, while others interpret it as a promising innovation. Such divergent perspectives reveal that creativity is not merely a technical issue but a socially embedded phenomenon that reflects cultural values and aesthetic traditions. This cultural variability complicates efforts to establish universal frameworks for understanding AI-generated art, as the meaning and acceptance of such work depend heavily on local contexts. In this sense, computational creativity is best understood as a pluralistic phenomenon shaped by cultural negotiation rather than as a monolithic global trend.

Potential solutions to these challenges can be derived from the literature, many of which emphasize the importance of education and collaboration. Peeperkorn (2022) and Franceschelli and Musolesi (2024) argue that fostering partnerships between artists and technologists can serve as a platform for public engagement, reducing skepticism and deepening appreciation of AI's creative potential. Educational initiatives, particularly those targeting younger generations, may help shift attitudes by normalizing the presence of AI in creative practices and reframing it as an extension of human ingenuity rather than a replacement. Such approaches can mitigate negative biases while also empowering artists to explore the expressive potential of these tools.

Another recurring recommendation involves the development of comprehensive evaluation metrics for creativity. DiPaola et al. (2018) suggested that multidimensional frameworks incorporating both subjective and objective measures are necessary to assess AI-generated art fairly. Such frameworks would account for novelty, complexity, emotional resonance, and contextual relevance, providing a more nuanced understanding of creativity that transcends simplistic comparisons between human and machine outputs. Without such metrics, the field risks reinforcing biases or undervaluing the contributions of AI to creative production.

At the same time, ethical considerations must be carefully addressed. Giorgetti (2024) cautioned that AI may struggle to replicate the depth of human emotional experience, raising questions about

whether machine-generated art can ever fully embody the expressive intent traditionally associated with artistic practice. These limitations highlight the need for continued reflection on what constitutes authenticity and meaning in art. Moreover, ethical concerns extend to labor and authorship, as the integration of AI into artistic production may disrupt established roles and create tensions within creative industries. Addressing these issues requires interdisciplinary dialogue and the development of policies that protect artistic integrity while embracing innovation.

The limitations of existing research also warrant attention. Much of the current literature focuses on technical innovation and Western contexts, leaving significant gaps in understanding the global and cross-cultural dimensions of computational creativity (Dwivedi & Mahanty, 2023; Żylińska, 2023). As highlighted in the results, studies from developing regions remain sparse, despite the fact that cultural diversity and varied infrastructural conditions likely shape unique responses to AI in art. Similarly, while experimental studies of algorithmic performance are abundant, fewer studies incorporate psychological theories of creativity or investigate the lived experiences of artists working with AI (DiPaola et al., 2018). This imbalance restricts the ability of the field to develop holistic models that integrate technical, cultural, and psychological perspectives.

Future research directions therefore need to address these limitations by prioritizing cross-cultural investigations and interdisciplinary approaches. Integrating perspectives from psychology, sociology, and media studies can provide richer insights into the cognitive, emotional, and cultural dimensions of human–AI collaboration. Expanding the geographical scope of research will ensure that findings are more representative of global diversity, shedding light on how different cultural traditions and infrastructural realities shape computational creativity. Furthermore, empirical studies that directly engage with artists and audiences in varied contexts can help uncover the subjective dimensions of AI-mediated creativity that are often overlooked in technically focused research.

In summary, the discussion of these findings demonstrates that computational creativity exists at the intersection of technical innovation, systemic conditions, cultural attitudes, and ethical considerations. Human–AI collaboration has clear potential to enrich artistic practice, yet its realization depends on addressing biases, ensuring equitable access to resources, and developing robust evaluative frameworks. By situating computational creativity within broader systemic and cultural contexts, the field can better navigate the challenges that accompany technological innovation and harness its potential to redefine the contours of creativity in the digital age.

CONCLUSION

This study has highlighted the central role of human–AI collaboration in advancing computational creativity and generative art, revealing that artistic innovation emerges most effectively when human intuition and machine intelligence intersect. Findings indicate that such collaboration produces works of greater complexity and novelty while reshaping traditional understandings of authorship and creativity (Bhambri & Khang, 2024; Cetinić & She, 2022). At the same time, challenges remain, particularly concerning subjective evaluation, cultural biases, and systemic inequalities in access to AI tools. Audiences often continue to perceive human-made works more favorably, signaling persistent skepticism toward machine-generated creativity (Ragot et al., 2020).

These findings underscore the urgency of addressing not only technical but also social and cultural dimensions of computational creativity.

To overcome these challenges, policies and practices must focus on promoting inclusive access to AI technologies, supporting educational initiatives that improve public understanding, and developing multidimensional evaluation metrics that capture both human and machine contributions (DiPaola et al., 2018; Peeperkorn, 2022). Interdisciplinary collaboration between artists, technologists, and policymakers is critical to fostering equitable and responsible integration of AI in creative practices. Future research should expand cross-cultural perspectives and investigate psychological and social dynamics more deeply, ensuring that diverse voices and contexts are represented in the global discourse on computational creativity. Ultimately, strengthening human–machine partnerships through inclusive education, robust evaluation frameworks, and cross-disciplinary engagement will be key strategies for advancing creativity in the digital era.

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