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تقاطعات ما بعد الحداثة: استكشاف التداخلات متعددة التخصصات للذكاء الاصطناعي في الفن الرقمي المعاصر

Postmodern Intersections: Exploring AI Interdisciplinarity in Contemporary Digital Art

بسمه بركات

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Abstract:-

This study investigates the evolving role of artificial intelligence (AI) in contemporary digital art, focusing on its interdisciplinary and postmodern dimensions. The central problem lies in the lack of critical frameworks that address AI not merely as a technical tool but as a co-creative agent that redefines authorship, artistic agency, and aesthetic boundaries. The research aims to explore how AI-driven art challenges traditional paradigms by integrating postmodern theories of fragmentation, hybridity, and decentralization. Through case studies of immersive works by Refik Anadol, Quayola, and Sougwen Chung, the study highlights how AI fosters hybrid creative processes and interactive audience experiences. These examples also raise ethical and legal concerns, including attribution, bias, and cultural appropriation. The significance of this research lies in its contribution to bridging the gap in scholarship on AI's artistic agency and its impact on digital aesthetics. Key findings reveal that human-AI collaboration is reshaping creative practices and expanding interdisciplinary dialogue. The study recommends developing critical evaluative frameworks and ethical guidelines to ensure responsible integration of AI in artistic production. Ultimately, it positions AI as a transformative force in postmodern digital art, calling for a redefinition of creativity in the age of intelligent machines.

Keywords:

Interdisciplinary Art, Artificial intelligence (AI), Digital Arts, Postmodernism, New Media Art

1. Introduction

Postmodernism and post-colonialism have laid the theoretical groundwork for interdisciplinary approaches in contemporary art, particularly within graphic digital practices. The emergence of "Area Studies"

during the Cold War in 1947 rooted in U.S. funded programs aimed at geopolitical dominance played a pivotal role in legitimizing interdisciplinarity through cultural and critical studies. Within postmodern critical theory, this translated into

a dismantling of rigid disciplinary boundaries and the rise of hybridity as a defining characteristic of contemporary artistic expression. Interdisciplinary strategies in art thus became essential for addressing complex sociopolitical, economic, and cultural narratives, especially in visual communication and digital media arts [17].

In the 21st century, postmodernism has evolved into a lens for critically re-examining how knowledge and creativity intersect across once separated domains. Technological advancements, particularly the expansion of the internet and digital networks, have enabled virtual collaboration and the sharing of theories, practices, and methodologies across geographies and disciplines. For instance, Visual art education now incorporates hybrid clusters such as “Two-Dimensional Art,” “Three-Dimensional Art,” and “Expanded Practice” to reflect the pluralistic, integrated nature of artistic inquiry [9p34, 12–29]. This paper situates its analysis within these postmodern developments, investigating how artificial intelligence (AI) redefines creative boundaries through its integration into contemporary graphic digital art, while foregrounding interdisciplinarity as both methodology and artistic outcome.

Theoretical Framework

1.1 Postmodernism and its Influence on Contemporary Art

Postmodernism emerged in the mid-20th century as a reaction against the fixed structures and ideals of Modernism [20]. Emphasizing ambiguity, contradiction, and cultural plurality, it challenged dominant narratives by embracing complexity and contextual meaning [15]. Rooted in historical

and political shifts - such as the Cold War and the rise of existentialist and surrealist thought - postmodernism replaced rigid hierarchies with a focus on subjective experience, relativism, and cultural fragmentation. It questioned traditional notions of truth, authorship, and history, transforming them into fluid and contested categories. [20]

This intellectual shift extended across disciplines, influencing not only art but philosophy, literature, and media. Thinkers like *Jean Baudrillard* and *Jacques Derrida* advanced ideas such as hyper-reality and the instability of meaning, dismantling binaries and conventional interpretations. In visual arts, this led to the rise of movements like Conceptual Art and postcolonial critique, which blurred boundaries between high and low culture [20]. Techniques such as pastiche, parody, and cultural recycling became central, reflecting a world in which meaning is constructed, deconstructed, and continuously reimaged through layered forms of expression [23].

1.2 Interdisciplinarity

Interdisciplinarity in art is both a response to and a reflection of broader social, economic, and political variables. Since the late 1960s, artists have increasingly challenged fixed boundaries in art, moving beyond traditional definitions and site-specific constraints to advocate for artistic freedom across both conceptual and physical terrains [16p61]. This shift opened art to engage critically with its sociocultural environment through novel forms and languages. Simultaneously, digital convergence has played a central role in reshaping artistic production, enabling environments and

artifacts that blur the line between art and technology. This has stimulated a dialogue between scientific innovation and artistic experimentation, generating new creative modalities and reconfiguring the potential of each field [11p381-388].

Interdisciplinarity represents not only a fusion of disciplines but a genuine methodological integration. It arises from the need to address multifaceted issues that transcend the scope of any single field, drawing on diverse insights to build richer, more holistic understandings [23]. In the realm of art and technology, this entails recognizing how innovations emerge from distinct technical cultures yet become embedded in and transformed by surrounding cultural practices. As technologies disseminate through society driven largely by consumer capitalism they are adapted and repurposed by artists, giving rise to novel forms of expression and redefining the cultural landscape itself [18p31-54]. This paper adopts an interdisciplinary framework to explore how AI not only intersects with but actively reshapes the conceptual and creative structures of contemporary digital art.

1.3 New Media Art as an Interdisciplinary Discipline

The technological revolution of the 20th century catalyzed a fundamental transformation in artistic practice, launching art into domains traditionally reserved for engineers and scientists [11p381-388]. Referred to as the Media Era, this period witnessed the convergence of postmodern artistic movements and electronic innovations, giving rise to new creative territories shaped by photography, video, virtual reality, and digital media [1]. These media-based practices

facilitated both localized and global collaborations, enabling artists to experiment with immersive installations, time-based works, and painterly video. Such hybrid forms merged the sensibilities of painting and film, offering poetic yet politically resonant languages to explore social complexity [11p381-388]. As digital tools became intuitive extensions of artistic thought, artists began to treat technology not as a neutral medium but as a co-creative agent, shaping process, form, and viewer interaction.

This integration has reconfigured exhibition strategies, aesthetic hierarchies, and disciplinary boundaries. Artists now engage real-time data, generative systems, and spatial computing to develop participatory works that transcend conventional art contexts. Scholars argue that the most meaningful innovation occurs not within disciplines, but at their edges, where media artists collaborate across scientific and cultural domains to generate new forms of knowledge [11p381-388]. These liminal zones foster interdisciplinary inquiry, where the arts re-introduce intuition, symbolism, and embodied experience into techno-scientific discourse. Media artists thus adopt tools and logics from adjacent disciplines such as AI, data visualization, or bio-sensing not simply to illustrate, but to interrogate and expand them. In doing so, they reaffirm the role of art as both epistemic and transformative, critically advancing the interdisciplinary ethos that defines contemporary digital practice [22p37, 315-321].

2. The Evolution of Digital Art and Technological Creativity

2.1 The Emergence of Digital Art and Generative Creative Systems

The evolution of digital art is deeply rooted in the technological revolutions of the 20th century, where the computer - the third tool of the media artist - emerged as a transformative force in creative production. From its conceptual origins in *Charles Babbage's* "analytical engine" to its operational applications in the 1940s, computing technology entered artistic practice by the 1980s, catalyzed by developments in interactive processing and the rise of the Internet. These changes gave birth to disciplines such as interactive and web-based art, while enabling multimedia integration across film, audio, text, and graphics dismantling traditional media boundaries and reshaping the methods and aesthetics of art-making [19p28-30]. Artists increasingly embraced tools that enhanced audience interaction and narrative complexity, resulting in immersive formats like cybernetic installations and virtual reality artworks that encourage participatory storytelling and contextual layering through maps, interviews, and audiovisual effects [13; 19p28-30].

Central to this shift is the flexibility and constructability of digital computing systems, which allow artists to simulate, manipulate, and generate new media across sound, text, and visual environments. While traditional applications such as video editing and music composition remain integral, the most radical potential lies in generative art practices where algorithms and code function as idea amplifiers and meta-creative engines. These systems serve not only as media tools but as conceptual collaborators in the creative process, allowing artists to blur the boundaries between simulation and invention [5p153-154].

As a result, digital art has become a dynamic laboratory for interdisciplinary exploration, where programming skills intersect with artistic intuition to foster innovation at the intersection of technological capability and aesthetic inquiry.

2.2 Collaboration in Digital Media Art Practice

The creation of knowledge and artistic output in the field of digital media art is deeply informed by the dynamic interplay between research and creative practice. This dialogue is foundational across artistic and academic contexts and is particularly evident in the use of algorithmic systems to produce audiovisual artworks that merge technological innovation with artistic expression. As digital media technologies have grown in complexity, so too has the need for interdisciplinary collaboration. Projects often require the integration of diverse expertise ranging from programming and sound design to aesthetics and critical theory necessitating team-based approaches grounded in effective communication and knowledge sharing. These multifaceted teams enhance both the efficiency and conceptual depth of creative projects by fostering problem solving from multiple vantage points [5p153].

Recently, such collaborative processes have become essential, especially as digital artworks increasingly involve generative systems, real-time data, and immersive installations. The fusion of technical skill with artistic vision has led to synergetic outcomes that transcend the limits of individual authorship. Success in these collaborative environments depends on developing a shared understanding of both creative intent and

technological application, ensuring alignment between disciplines and clarity in strategic direction. This shift toward co-creation highlights the evolving nature of digital media art, where the convergence of specialized knowledge, innovation, and cooperative methodologies continues to redefine creative boundaries and exemplify the interdisciplinary potential [5p153].

3. Artificial Intelligence as a Creative Force

3.1 The Emergence of AI as a Cognitive and Creative Collaborator

AI defined as a computational system capable of performing tasks associated with human intelligence - such as reasoning, learning, and problem solving - has gradually evolved from theoretical constructs to operational technologies. Since the formulation of the term at the 1956 Dartmouth conference, efforts to develop fully intelligent machines have continued, though true general AI remains out of reach. While AI systems now outperform humans in tasks like large scale data analysis, their cognitive components especially consciousness and intention remain conceptually unresolved. The Turing Test continues to serve as a benchmark for evaluating machine behavior in human-like terms, even as debates persist over the limits and implications of machine cognition [27].

This growing cognitive capacity has sparked a parallel transformation in the creative domain. Historically rooted in emotion, imagination, and cultural identity, art and creativity are increasingly shaped by AI's role as both a generative engine and a conceptual partner. From *Harold Cohen's* AARON in the 1960s to contemporary neural networks and deep learning systems, AI has shifted from

autonomous production to collaborative experimentation, enabling artists to explore new aesthetic vocabularies and conceptual frameworks. These developments raise critical questions about authorship, authenticity, and ethical responsibility, while also reshaping curatorial practices and interpretive strategies. As AI becomes more embedded in artistic workflows, it challenges traditional boundaries and contributes to a redefinition of creativity [12].

3.2 Modes of AI Integration and Co-Creative Potential in Art

A spectrum of applications manifests AI's integration into contemporary art: generative, assistive, analytical, and hybrid. Generative AI produces original content such as images, music, and stylistic transformations while assistive AI streamlines processes such as 3D modeling, editing, and prototyping. Analytical AI aids classification and interpretation, evaluating artworks through composition or emotional resonance. Hybrid approaches are particularly transformative, combining human input with machine generation in real time. These varied modalities demonstrate AI's versatility and signal a shift toward pluralistic authorship and interactive creativity, encouraging artists to explore new forms, methods, and genres within an evolving technological landscape [12].

Within this evolution, the field of computational creativity distinguishes between autonomous systems and co-creative frameworks. Projects like *The Painting Fool* and *Shimon* exemplify AI systems that simulate human creativity but remain philosophically distinct due to their lack of cultural consciousness and lived experience.

Co-creativity framed as “human in the loop” positions AI as a collaborative agent that generates ideas, unlocks conceptual impasses, and introduces serendipitous errors as sources of innovation. Artists describe these processes as dialogic and improvisational, reinforcing AI’s role as an exploratory partner. This intersection of new media art and computer science emphasizes AI’s significance in expanding interdisciplinary collaboration and destabilizing traditional hierarchies of artistic control [27; 12].

3.3 AI's transformative role in redefining creative boundaries and interdisciplinarity.

AI has redefined the boundaries of contemporary art by challenging traditional notions of artistic authorship, production, and audience engagement. Through techniques like style transfer and image synthesis, AI systems now autonomously generate visual content such as paintings and illustrations, enabling novel reinterpretations of cultural identity and heritage. These developments, coupled with blockchain-based methods for authentication and distribution, have contributed to a new digital art economy and expanded access to generative systems beyond human cognitive limits [12]. This shift has redefined creative boundaries as collaborative zones where real-time exchanges between artist and algorithm foster co-authorship and aesthetic innovation. Artists increasingly engage with algorithmic errors as generative inputs, embracing machine collaboration as a catalyst for aesthetic experimentation and interdisciplinary practice [3; 27; 12].

Yet this transformation presents critical ethical and legal challenges. Issues such as authorship rights, copyright eligibility, and ownership remain ambiguous, especially when AI-generated works derive from datasets with unverified or biased sources [10]. These concerns are magnified by the opacity of training data, risks of cultural appropriation, and the potential dilution of individual artistic identity [25; 14]. Responding to these complexities, Siri, Olcese, and Spulber (2024) call for new evaluative frameworks grounded in algorithmic transparency, cultural sensitivity, and conceptual depth. As AI drives a paradigm shift from product-based to process-centered creativity, art criticism and pedagogy must evolve to distinguish innovation from imitation and co-authorship from automation. For AI to contribute meaningfully to artistic and interdisciplinary futures, its integration must be guided by critical reflection, ethical rigor, and inclusive creative values [21].

4. The Digital Revolution and AI and their Impact on Artistic Innovation

The digital revolution has catalyzed a fundamental reconfiguration of artistic creation, marked by the introduction of technologies such as virtual reality (VR), augmented reality (AR), AI, and real-time data visualization tools shown in (Figure 1). These digital frameworks have facilitated new forms of visual storytelling, enabling artists to transcend static mediums through dynamic, interactive, and immersive experiences [4p 403–420].

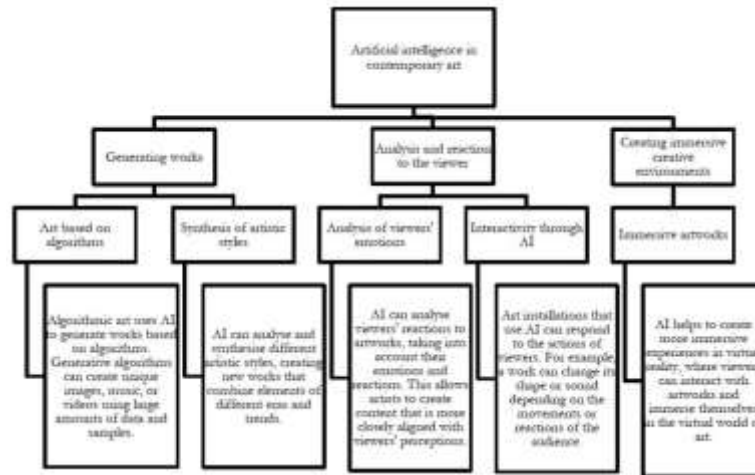


Figure 1: Features of artificial intelligence in contemporary art ((Borysova et al., 2024).

Unlike traditional media, digital tools engage the audience as active participants in the artistic process, allowing for co-creation and real-time adaptation hallmarks of postmodern aesthetics. This transformation reflects a broader shift toward virtual aesthetics, where artworks occupy intangible environments shaped by software, algorithms, and encoded logic in doing so, AI reshapes the traditional

dynamic between the artist and the viewer, decentralizing authorship and positioning the audience as co-interpreters or even co-creators of meaning. *Borysova et al. (2024)* emphasize that this reconfigured relationship introduces new communicative paradigms, where the artwork evolves through user interaction and machine responsiveness as shown in (Figure 2). [4p 403–420].

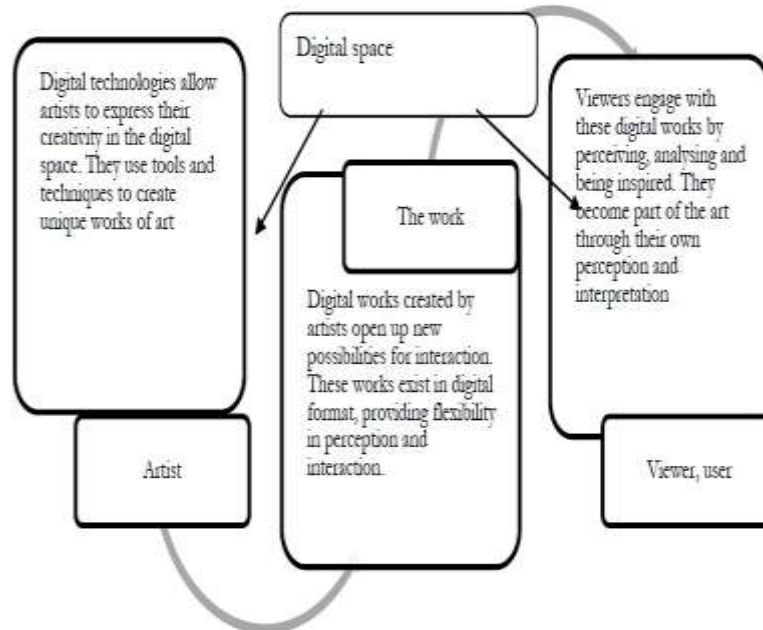


Figure 2: The relationship between artist and viewer in the digital art space ((Borysova et al., 2024).

Furthermore, the integration of platforms for generative design and multimedia synthesis has opened space for cross-disciplinary experimentation, fostering hybrid works that exist at the intersection of visual art, data science, and interactive media. These developments highlight AI and other digital tools not only as instrumental aids, but as catalysts for reimagining the boundaries and agency of the artist in the digital age. [4p 403–420].

5. Case Studies:

To illustrate the theoretical and practical dimensions of AI's integration into contemporary digital art, this study selects a set of case studies based on three key criteria: the degree of human–AI collaboration, the interdisciplinary nature of the work, and the conceptual alignment with postmodern aesthetics and critical inquiry. The selected examples: Refik Anadol's immersive data-driven installations, Quayola's Strata Series, and Sougwen Chung's Body Machine (Meridians), represent diverse yet interconnected investigations into AI as both a creative partner and a conceptual lens. These projects were chosen for their ability to fuse computational systems with artistic vision, engage with scientific and cultural discourse, and challenge conventional paradigms of authorship, materiality, and audience interaction in digital arts.

5.1 Refik Anadol

Refik Anadol (b. 1985, Istanbul) is a Turkish-American media artist whose interdisciplinary practice explores the convergence of machine

intelligence, architecture, and data aesthetics. Founder of RAS Lab in Los Angeles, *Anadol* leads a team developing large-scale public installations that reimagine AI not merely as a tool, but as a creative collaborator. His project *Living Architecture: Casa Batlló* (2022) (shown in Figures 3, 4 & 5) exemplifies this vision, transforming the UNESCO World Heritage Site in Barcelona into a generative, data-driven artwork. By integrating over one billion archival images and real-time climate data through custom AI algorithms, *Anadol* converted Gaudí's curvilinear façade into an evolving "data sculpture" that visualized both environmental flux and collective memory [2]. The work challenges conventional boundaries between nature and computation, heritage and innovation. Through AI-generated projections, scent augmentation, and sound design, the façade becomes a living interface where postmodern themes of hybridity, authorship, and spatial narrative converge. The companion installation (*In the Mind of Gaudí*), a six-sided LED immersive space, further extended this experiential dialogue. Auctioned as an NFT for \$1.38 million at Christie's, *Living Architecture* also redefined art economies and distribution models [7]. As a case study, it demonstrates how AI can interpret historical archives and real-time data to foster new forms of aesthetic agency embodying the core themes of this paper: interdisciplinarity, co-authorship, and the fluid boundaries of creative practice in the age of intelligent systems.

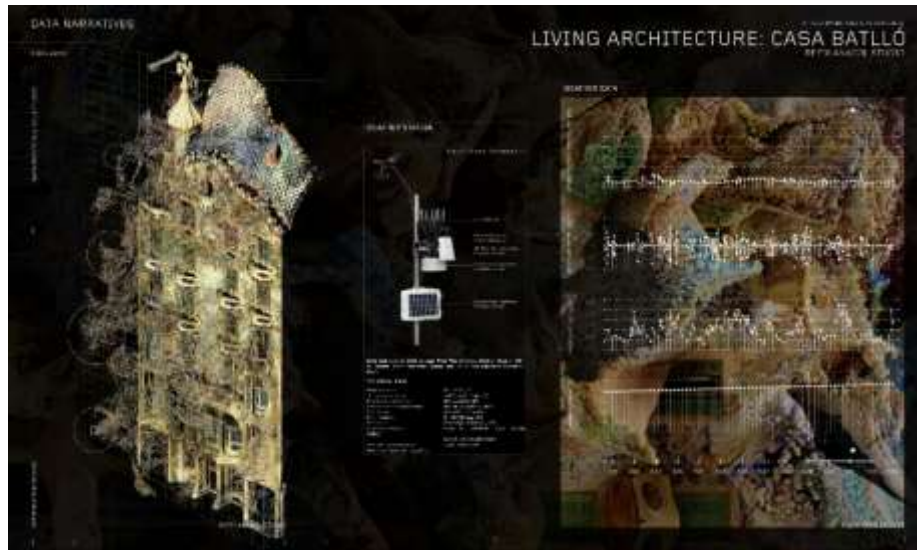
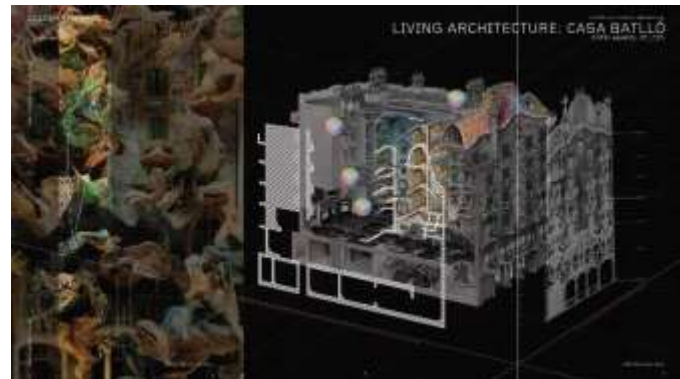


Figure 3 : Refik Anadol, Living Architecture: Casa Batlló, Generative AI data-driven digital painting and Sculpture, Led Canvas Dimensions: 12m × 6m × 6m, 4mm Pixel Pitch, Live sensor data, Custom software + Hardware, Realtime scent augmentation, 2022, façade of Casa Batlló, Barcelona, Spain (check video of Art project <https://refikanadol.com/works/living-architecture-casa-batllo/>)



Figures 4 & 5: Refik Anadol, Living Architecture: Casa Batlló, Generative AI data-driven digital painting and Sculpture, Led Canvas Dimensions: 12m × 6m × 6m, 4mm Pixel Pitch, Live sensor data, Custom software + Hardware, Realtime scent augmentation, 2022, façade of Casa Batlló, Barcelona, Spain (check video of Art project <https://refikanadol.com/works/living-architecture-casa-batllo/>)

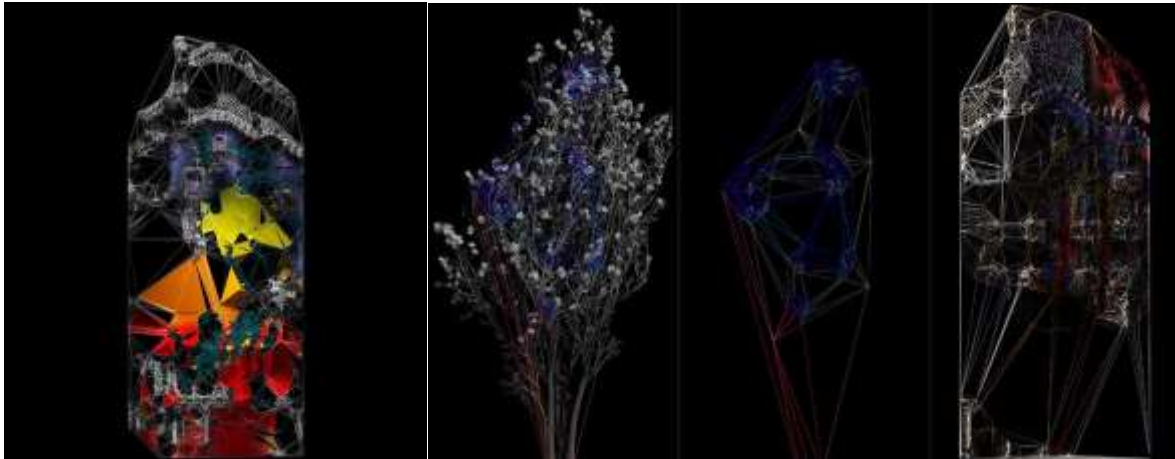
Quayola

Quayola (b. 1982, Rome) is an Italian artist, internationally recognized for his innovative use of computational abstraction to reinterpret classical aesthetics. Working between London and Rome, *Quayola's* practice encompasses immersive installations, audiovisual performances, sculpture, and generative visual

systems. He frequently engages with canonical art forms such as Baroque architecture, Hellenistic sculpture, and Old Master painting translating them into algorithmic compositions through custom software. His 2025 project *Arborescent* (shown in Figures 6, 7, 8 & 9), commissioned for the façade of Casa Batlló in Barcelona (as *Anadol's* project), exemplifies

this hybrid approach. Presented as part of the “Heritage of Tomorrow” initiative and supported by Integrated Systems Europe (ISE)

and the SONAR Foundation, the projection mapping drew over 95,000 viewers across two evenings [6].



Figures 6 & 7: Quayola, Arborescent, Algorithm-based generative audiovisual projection, Biomimetic branching simulations, Algorithmic wind motion modeling, Custom AI software + soundtrack composition, 2025, façade of Casa Batlló, Barcelona, Spain (check video of Art project <https://www.designboom.com/art/casa-batllo-facade-quayola-digital-arborescent-mapping-projection-11-19-2024/>)

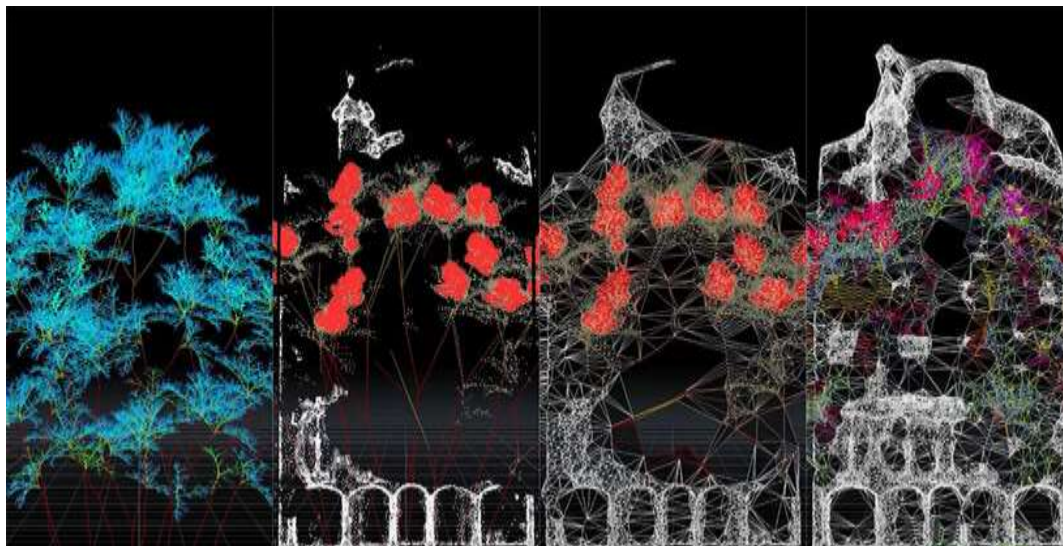


Figure 8: Quayola, Arborescent, Algorithm-based generative audiovisual projection, Biomimetic branching simulations, Algorithmic wind motion modeling, Custom AI software + soundtrack composition, 2025, façade of Casa Batlló, Barcelona, Spain (check video of Art project <https://www.designboom.com/art/casa-batllo-facade-quayola-digital-arborescent-mapping-projection-11-19-2024/>)



Figure 9: Quayola, *Arborescent*, Algorithm-based generative audiovisual projection, Biomimetic branching simulations, Algorithmic wind motion modeling, Custom AI software + soundtrack composition, 2025, façade of Casa Batlló, Barcelona, Spain (check video of Art project <https://www.designboom.com/art/casa-batllo-facade-quayola-digital-arborescent-mapping-projection-11-19-2024/>)

Arborescent simulates natural dynamics through algorithm-based visualizations, transforming Gaudí's architecture into a living canvas animated by artificial wind and branching arboreal forms ^[24]. The digital trees sway, grow, and respond to the structure's geometry, creating a contemplative space between nature and code. This interplay was further enhanced by a soundtrack composed by *Quayola* himself, blending traditional instrumentation with algorithmic composition ^[6]. The technical challenge of integrating botanical behaviors into the building's curvilinear form underscores *Quayola*'s commitment to reframing historical architecture through contemporary computation. His process repositions the façade as a dynamic, data-driven artwork

merging environmental responsiveness, spatial poetics, and machine learning aesthetics ^[24].

Quayola's broader body of work, which has been exhibited at institutions such as the V&A (London), Palais de Tokyo (Paris), and Ars Electronica (Linz) - where he received the Golden Nica in 2013 - demonstrates a sustained inquiry into the evolving relationship between tradition, perception, and digital technology. *Arborescent* positions AI not just as a visual mechanism but as a philosophical instrument, inviting reflection on authorship, environmental systems, and algorithmic imagination. By re-contextualizing heritage through computational form, *Quayola* exemplifies the interdisciplinary potential ^[6; 24].

5.2 Sougwen Chung

Chinese-Canadian artist and researcher *Sougwen Chung* (b. 1985) is internationally recognized for pioneering human-machine collaboration in contemporary art. Her practice investigates the convergence of gestural mark-making and algorithmic systems as a lens for exploring evolving relationships between humans and intelligent machines. *Chung* has exhibited at leading institutions including the New Museum (New York), Haus der Kunst (Munich), and the Espoo Museum of Modern Art, and was recently named one of TIME's 100 Most Influential People in AI [26].

Her 2024-2025 project *Body Machine (Meridians)* (shown in Figure 10) exemplifies her interdisciplinary approach by merging robotics, bio-signal feedback, and environmental data into a speculative

framework of co-creation. The work consists of biomimetic robotic sculptures "sculpted in air," which reimagine machines as extensions of living systems. Drawing on philosopher Gilbert Simondon's notion of the machine as metaphor, *Chung* challenges functionalist views of AI and proposes a symbiotic model of authorship, where human intention and robotic interpretation blur through gestural capture and custom AI training models [8]. The project introduces "Meridian Data" - movement data representing the body as a generative system - which informs the next generation of her Drawing Operations Unit (D.O.U.G.). These data streams are categorized into Cybernetic and Biomimetic Meridians, further divided into Macrobiomes (e.g., forest, desert, glacier) and Microbiomes, reflecting both ecological and algorithmic complexity [25].

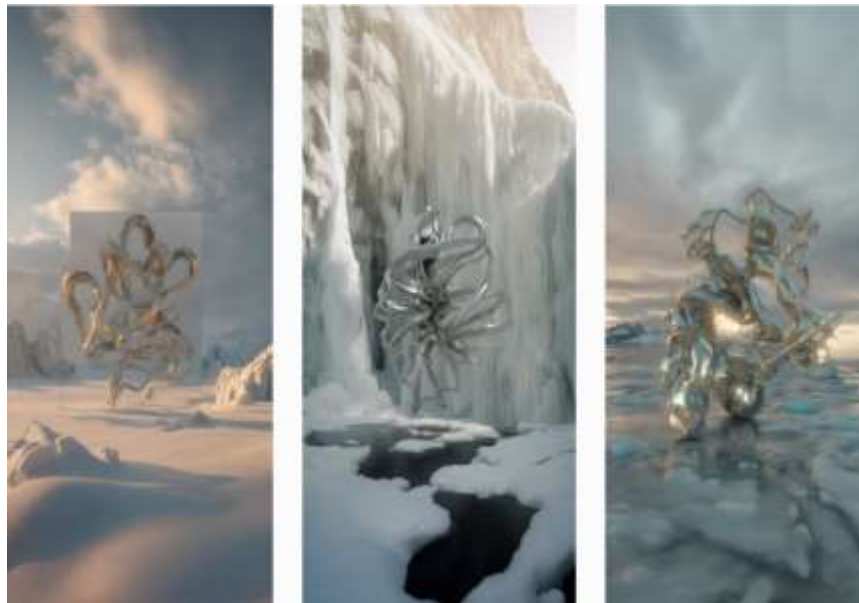


Figure 10: Sougwen Chung, *BODY MACHINE (MERIDIANS)*, Biomimetic robotic installation and generative AI data-driven sculpture, Custom AI training models, Spatial motion capture + Meridian Dataset, Environmental data from Tezpotaln, Svalbard, and Riyadh biomes, 168 unique generative works with accompanying signed prints, 2024–2025, Studio SCILICET, United Kingdom (project details: <https://sougwen.com/project/bodymachinemeridians-2024>)

Chung's field research in Tezpotaln, Svalbard, and Riyadh during 2023-2024 provided environmental data that shaped the biome-specific models. The resulting collection includes 168 generative artworks, each accompanied by movement data and signed physical prints, reinforcing the project's conceptual hybridity and material presence [25]. *Body Machine (Meridians)* exemplifies the postmodern dissolution of disciplinary boundaries by integrating AI, environmental science, somatic gesture, and philosophical inquiry. It positions the machine not as an autonomous agent, but as a co-evolving entity shaped by imagination, ecological context, and embodied data aligning directly with this paper's investigation into AI's transformative role in redefining creative boundaries and interdisciplinarity.

5.3 Exploring the Role of AI in Enriched and Immersive Art Experiences

The case studies of *Anadol*, *Quayola*, and *Chung* illustrate how AI is fundamentally transforming contemporary artistic practice through enriched, interdisciplinary, and immersive experiences. Across these examples, AI emerges not merely as a tool but as a co-creative agent processing environmental data, interpreting human gestures, or simulating organic systems to generate dynamic, hybrid works. This shift highlights the potential of generative and context-aware AI to expand artistic vocabularies, facilitate human-machine collaboration, and foster real-time responsiveness in visual and spatial storytelling. When integrated with technologies like VR and AR, AI further

opens possibilities for immersive art environments that engage audiences not just as observers but as participants in evolving creative systems [12].

This transformation challenges established conceptions of authorship, originality, and artistic identity. AI enables artists to engage in dialogic, improvisational creation embracing uncertainty, machine feedback, and serendipitous output as integral to the process. Such hybrid practices, as demonstrated in *Body Machine (Meridians)* and *Living Architecture: Casa Batlló*, blur distinctions between the artist, the machine, and the environment while expanding the methodological boundaries of art and design. Furthermore, AI-generated personalization fosters intimate, adaptive viewer experiences that redefine audience agency and cultural consumption. These developments examine how AI reshapes creative boundaries within postmodern and interdisciplinary frameworks [12].

AI continues to reshape the infrastructure of the art world itself. With the growing prevalence of NFTs and AI-generated works, new models of value, provenance, and ownership are emerging raising both ethical questions and curatorial opportunities. As machine creativity gives rise to new genres and paradigms, AI-driven art may become a cultural force of its own. While concerns regarding bias, transparency, and appropriation remain, responsible and critically engaged AI integration holds the potential to democratize access to creativity, elevate marginalized perspectives, and stimulate innovation across disciplines [12].

6. Conclusions and Discussions

The findings of this study reveal that AI is playing a transformative role in shaping interdisciplinary practices within contemporary graphic digital art. AI facilitates the merging of disciplines, encouraging cultural and creative dialogue that transcends conventional boundaries. This shift aligns with postmodern ideals and liberal arts philosophies, emphasizing pluralism, critical inquiry, and the expansion of cognitive and aesthetic horizons.

The relationship between art, science, and technology is evolving rapidly, with AI contributing to the expansion of multimedia art practices that combine sound, image, interactivity, and generative algorithms. Rather than merely supporting artistic production, AI has become a co-creative agent that influences both the conceptual foundations and formal qualities of artistic work. This collaboration leads to the formation of hybrid forms that challenge the definitions of authorship and originality, while also deepening audience engagement.

The integration of AI into artistic processes also reconfigures creative boundaries. It fosters experimental approaches and novel forms of expression that respond to emotional, spatial, and social dimensions in new ways. While artists are exploring dynamic tools and immersive technologies to shape aesthetics and storytelling, ethical and legal considerations such as attribution, authenticity, and algorithmic transparency remain critical to sustaining this evolving practice.

Overall, AI enables a reconceptualization of creativity as a shared process. The co-existence of human intuition and machine-

generated insight offers powerful opportunities for innovation while demanding thoughtful regulation and ethical reflection. Through continued interdisciplinary collaboration, education, and responsible implementation, AI has the potential to enrich artistic inquiry and cultural understanding in profound and enduring ways.

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ملخص البحث:-

تبحث هذه الورقة البحثية في الدور المتطور للذكاء الاصطناعي في الفن الرقمي المعاصر، مع التركيز على أبعاده متعددة التخصصات وما بعد الحدائيه. تكمن المشكلة الأساسية في غياب الأطر النقدية التي تتناول الذكاء الاصطناعي ليس فقط كأداة تقنية، بل كعامل إبداعي مشارك يعيد تعريف مفاهيم التأليف الفني والفاعلية الجمالية والحدود الإبداعية. يهدف البحث إلى استكشاف كيف تتحدى الأعمال الفنية المعتمدة على الذكاء الاصطناعي النماذج التقليدية من خلال دمج نظريات ما بعد الحدائيه مثل التفكك والتهجين واللامركزية. ومن خلال دراسة حالات لأعمال غامرة لكل من رفيق أناضول وكويولا وسوغوين تشونغ، يسلط البحث الضوء على كيفية تعزيز الذكاء الاصطناعي لعمليات إبداعية هجينة وتجارب تفاعلية مع الجمهور، مع إثارة قضايا أخلاقية وقانونية مثل نسب العمل والتحيز والاستيلاء الثقافي. تكمن أهمية البحث في مساهمته في سد الفجوة المعرفية حول دور الذكاء الاصطناعي في الفن وتأثيره على الجماليات الرقمية. وتكشف النتائج أن التعاون بين الإنسان والآلة يعيد تشكيل الممارسات الإبداعية ويوسع الحوار متعدد التخصصات. ويوصي البحث بتطوير أطر تقييم نقدية وإرشادات أخلاقية لضمان دمج مسؤول للذكاء الاصطناعي في الإنتاج الفني. وفي النهاية، يقدم الذكاء الاصطناعي كقوة تحويلية في الفن الرقمي ما بعد الحدائيه، داعيًا إلى إعادة تعريف الإبداع في عصر الآلات الذكية.

الكلمات المفتاحية:

الفن متعدد التخصصات، الذكاء الاصطناعي (AI)، الفنون الرقمية، ما بعد الحدائيه، فن الوسائط الجديدة.