

A Study of the “Aura” Experience of AIGC Art in Immersive Virtual Exhibitions

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Abstract. In the age of artificial intelligence, a new form of art based on AIGC (AI-Generated Content) technology is emerging and demonstrating significant research value. Because its core form consists of algorithms and data, allowing for infinite replication, AIGC art seems to naturally dissolve the "Aura" proposed by Walter Benjamin. However, when this art form is combined with Immersive Virtual Exhibitions, it often regains a unique "here-and-now" charm, presenting an effect similar to the "Aura" of traditional artworks. This raises the central question of this paper: Can immersive exhibitions with participation of AIGC reshape a new kind of "Aura"? This study selects Refik Anadol's Unsupervised — Machine Hallucinations — MoMA, Ouchhh Studio's POETIC-AI, and Nohlab's VAN GOGH: AN IMMERSIVE JOURNEY as representative cases, and conducts analysis from four dimensions: technology, experience, interaction, and social reproduction. The study finds that immersive exhibitions create a new "digital aura" by transforming the appreciation of art from a static viewing of an "original" to a dynamic experience for the audience. This "digital aura" does not rely on the material uniqueness of the artwork but is rooted in the unique and irreplicable nature of the individual experience.

Keywords: AIGC, immersive, virtual exhibition, Aura, digital art

1. Introduction

In the current era when artificial intelligence technology is rising rapidly, the wave of AIGC is profoundly reshaping the field of artistic creation. AIGC art, with its algorithm-based generation logic and efficient capabilities of creation, has drawn widespread attention from both academic and art circles. Unlike traditional artworks, which rely on the uniqueness of a physical carriers, AIGC works exist as code and data, allowing them to be replicated and distributed infinitely without degradation. This characteristic directly recalls the argument made by German thinker Walter Benjamin in *The Work of Art in the Age of Mechanical Reproduction*: that mechanical reproduction technology shakes the foundation of an artwork's "Aura" [1], causing it to wither away. Benjamin pointed out that the "Aura" is rooted in the artwork's status as a unique original and its "here-and-now" presence. If mechanical reproduction already caused the "Aura" to decline, then the impact of AIGC technology on the art's "Aura" is even more complex and acute.

Encouragingly, however, when AIGC art is combined with immersive exhibitions, it often creates a powerful sense of presence, offering audiences a profound and unique experience. This

phenomenon leads to the core question of this research: In the age of AIGC, how do immersive digital exhibitions use unique experiential mechanisms to allow inherently reproducible AIGC art to regain certain form of uniqueness?

To answer this question, this study will adopt case study and textual analysis methods to examine three representative AIGC immersive exhibitions: Refik Anadol's *Unsupervised — Machine Hallucinations* — MoMA, Ouchhhh Studio's *POETIC-AI*, and Nohlab's *VAN GOGH: AN IMMERSIVE JOURNEY*. The research will analyze the underlying logic of their experience construction from four dimensions: technology, experience, interaction, and social media. The significance of this study lies in its attempt to extend Benjamin's theory of the "Aura" into a digital context, exploring its possible forms in the age of artificial intelligence. By proposing the concept of the "digital aura", this research aims to provide an analytical framework for understanding the uniqueness of AIGC art and its value in contemporary culture, while also offering insights into the future possibilities of digital art exhibitions.

2. Literature review

2.1. The origin and evolution of the "Aura" theory

The concept of the "Aura" was introduced by the 19th-century German philosopher Walter Benjamin. In his essay *A Little History of Photography*, he defined it as "a strange weave of space and time: the unique appearance of a distance, however close it may be". Five years later, in *The Work of Art in the Age of Mechanical Reproduction*, Benjamin presented a more systematic argument for the "Aura", emphasizing that it is composed of an artwork's authenticity, sense of distance, cult value, and uniqueness. However, he argued that mechanical reproduction technology shatters the uniqueness of art, leading to the withering of the "Aura" and shifting the value of art from "cult" to "exhibition".

Although Benjamin predicted the decline of the Aura in the 20th century, contemporary scholars have continued to reinterpret it in the context of new media. Wang Caiyong points out that the "Aura is a product of the communication between people and objects" [2], not an inherent property of the object itself, but rather a form of "mutual responsive communication." Liao Jinying supplements this from a psychological perspective, suggesting that the "Aura" is a unique mode of perception, with an internal mechanism that blends "Proustian involuntary memory" with "Freudian free association" [3]. Building on this, Liu Yi proposed the forward-thinking concept of "generative reproduction," which gives rise to a new "cross-media aesthetic experience." He argues that each unique interaction between the audience and the work constitutes an irreplicable "microscopic historical duration," thereby reconstructing the Aura in an "aggregated state" of experience [4].

In summary, contemporary scholars generally agree that the "Aura" has not completely vanished but has instead undergone a transformation in its form and medium. This provides a theoretical foundation for the proposal of a "digital aura" and offers academic support for exploring the uniqueness of AIGC art in immersive exhibitions.

2.2. A review of research on immersive virtual exhibitions

In recent years, with the rapid development of digital technology, the "immersive exhibition" has gradually become a research hotspot at the intersection of art and technology. Academic research in this area is becoming increasingly mature, focusing mainly on three dimensions: the application of multi-sensory interactive art, unique aesthetic characteristics, and systematic scene design.

On the level of multi-sensory interaction, Liu Bowen notes that a fundamental feature of immersive exhibitions is their "multi-sensory interaction" model. This model engages the audience's senses of sight, hearing, touch, and even taste and smell simultaneously, altering the interactive relationship and experience between the audience and the artwork [5]. Regarding aesthetic characteristics, Luo Anna, from an aesthetic perspective, emphasizes that an Immersive Virtual Exhibition is not merely a technological showcase but an art form dedicated to creating a specific "artistic conception" [6]. In terms of design methodology, Sun Yujie's research provides a comprehensive study and summary from a design perspective, covering the definition and history of immersive virtual exhibitions, scene elements, connections to traditional aesthetic concepts, positive and negative effects on the audience, and recommendations for practitioners in various fields. She also points out that immersive exhibitions possess a unique "multiple artistic conception" [7]. Overall, a consensus has formed in academia: immersive exhibitions are not about creating spectacles with technology, but are a new art form that uses multi-sensory interaction as a key technique, aims to create a holistic aesthetic "atmosphere," and focuses on forging a one-of-a-kind interactive relationship between the audience and the work. However, existing research has largely focused on traditional digital art, with relatively little attention paid to the application of AIGC—an emerging technology with distinct properties—in immersive exhibitions.

In conclusion, the current body of research has not fully revealed the interactive mechanisms between the unique attributes of AIGC art and the immersive exhibition experience. Furthermore, there is a lack of examination from the perspective of the "Aura" theory regarding the tension between its reproducibility and uniqueness. This study proceeds from this gap, seeking to explore how AIGC works in Immersive Virtual Exhibitions can provide audiences with a one-of-a-kind experience, and in doing so, reshape a new form of "digital aura" based on artificial intelligence technology.

3. Analysis and results

3.1. Case studies

3.1.1. Refik Anadol, Unsupervised—Machine Hallucinations—MOMA

Refik Anadol's *Unsupervised* is displayed on a giant 24-foot square media wall in the bustling public atrium of New York's MoMA. The work reflects on the relationship between technology and creativity, exploring what AI can generate when inspired by artworks. The screen shows continuously evolving abstract visuals, where paint-like particles churn and stretch while colors and forms constantly reorganize. The artwork's core technology is a real-time Generative Adversarial Network trained on public data from MoMA's collection. It also incorporates real-time environmental data, such as crowd movement and New York's weather, to influence the final visual output. Benches are placed to encourage visitors to linger and immerse themselves in the dynamic digital atmosphere. As one of MoMA's first AIGC commissions, this piece symbolizes the institution's recognition of the medium. It also sparked a warm response on social media, especially on the TikTok platform, where many viewers shared it as a must-visit "check-in spot".

3.1.2. Ouchhhh Studio, POETIC-AI

Ouchhhh Studio's *POETIC-AI* translates scientific texts on light, physics, time, and the universe into a poetic audiovisual art experience. In a darkened space, white particles and light beams cover all

surfaces, accompanied by a grand electronic symphony, forming complex patterns like nebulas and vortexes. First exhibited in Paris in 2018, the work uses AI to translate scientific data into audiovisual effects. The exhibition employs 360-degree projection mapping for seamless visual coverage and a custom sound system designed to create an immersive surround-sound experience. As a signature piece for the award-winning Ouchhhh Studio, POETIC-AI has gained international acclaim through exhibitions at numerous art festivals and institutions.

3.1.3. Nohlab, VAN GOGH: AN IMMERSIVE JOURNEY

VAN GOGH: AN IMMERSIVE JOURNEY reimagines Van Gogh's well-known works, allowing audiences to explore his life and art in a new way. Classic paintings are projected onto large-scale walls and floors, achieving dynamic effects with the support of AIGC technology: For instance, in "Starry Night", the nebula rotates slowly; in "Sunflowers", they sway gently with the wind; and in "Wheat Field with Crows", the crows soar in the sky. Presented as a commercial tour, the exhibition has visited over 50 cities. It uses custom AI to learn Van Gogh's style and generate imagery through high-dimensional algorithms and neural networks. The exhibition adopts large-scale projection mapping technology to project AI-generated visual content onto the walls and floors of the exhibition hall. The spatial design follows a narrative flow through distinct zones—prologue, transition, main hall, and VR area—to guide the audience's emotional journey. The exhibition has been a global success, attracting over 5 million visitors and winning the USA Today Readers' Choice Award for "Best Immersive Experience."

3.2. The experience mechanism of immersive virtual exhibitions

3.2.1. Technical immersion

Technical Immersion is achieved through two primary methods: creating multi-sensory experiences and weakening spatial perception. Visually, exhibitions use oversized screens and 360-degree envelopment to achieve immersion. The 24-foot media wall in Unsupervised, for instance, dominates the viewer's field of vision, immersing them in the work. Similarly, teamLab's Water Particles in the Tank projects onto large, curved interior walls rather than flat screens. This technique creates a giant image that envelops the viewer's entire field of vision, ensuring visual immersion from any viewpoint. Acoustically, surround-sound systems with careful sound design are common. POETIC-AI uses an ambient electronic symphony to make the audience feel enveloped in sound, achieving auditory immersion.

Immersion is also enhanced by diminishing the sense of space. In James Turrell's retrospective, his Ganzfeld installation appears as a vast, borderless field of light. Surrounded by it, viewers lose their spatial judgment and focus their senses entirely on the artwork before them, deepening their immersive state.

3.2.2. Scarcity of experience

Scarcity of Experience is constructed through two channels: external time-space limitations and the internal uniqueness of the experience. Regarding external limits, exhibitions have fixed durations and often require timed bookings, which increases access difficulty and makes the visit feel more unique. Strict spatial limitations also make the on-site experience irreplaceable, as it cannot be fully replicated elsewhere. The significant time investment and location-specific nature of works like Random International's Rain Room underscore the preciousness of the experience.

The uniqueness of the experience itself is also crucial. Unsupervised is a key example, as its visuals are generated from real-time environmental data, making every moment unique for each visitor and thus creating scarcity. This scarcity also extends to irreplicable textures and effects. Unsupervised's imagery has a unique paint-like texture with particle effects found in no other work, while the flowing light in POETIC-AI can only be witnessed within that specific exhibition. These inimitable qualities make the act of viewing a scarce experience.

3.2.3. Sense of spatial interaction

A Sense of Spatial Interaction is created through spatial design, which falls into either open-plan or guided approaches. POETIC-AI exemplifies an open-plan design with no fixed path, encouraging visitors to explore freely. This self-guided discovery fosters a continuous interaction with the space. At teamLab's Borderless, the absence of boundaries between artworks similarly prompts visitors to immerse themselves in a complex environment, generating interaction.

The guided approach is the opposite, featuring a clear, designed route. VAN GOGH: AN IMMERSIVE JOURNEY organizes its space into narrative zones like a prologue, transition, main hall, and VR area. This structure leads visitors through an emotional arc, from introduction to climax. This story-driven progression is another effective way for the audience to generate a Sense of Spatial Interaction.

3.2.4. Social reproduction

Social Reproduction has become a necessary part of the viewing experience, transforming audiences from passive observers into active participants in re-creation. Sharing on social media acts as a review of the exhibition, allowing memorable visuals to be re-experienced while attracting potential visitors. More significantly, this post-visit activity influences behavior during the visit. The millions of TikTok views for VAN GOGH: AN IMMERSIVE JOURNEY, for example, motivate attendees to be more focused in seeking shareable content. To capture the perfect image in POETIC-AI, a visitor might carefully observe light patterns and search for the ideal angle, leading to a more engaged experience.

The audience's secondary creation after the visit serves as an extension and elevation of the experience. This is essentially a re-creation of their own experience, a process in which they reflect on their visit, draw inspiration, and engage in deeper thought, often leading to a more mature and complete understanding of the exhibition.

4. Discussion

4.1. Thoughts on the uniqueness of AIGC art

AIGC art in Immersive Virtual Exhibitions signals that new-era technology has created an opportunity for the "uniqueness" of AIGC art to be relocated. AIGC art simultaneously possesses both "reproducibility" and a "here-and-now" presence—two attributes that are typically difficult to reconcile. On a technical level, its essence is an algorithm running on specific hardware, which can be infinitely replicated. However, in an immersive exhibition setting, the unique on-site audiovisual effects, ticketing mechanisms that limit time and place, and social media sharing compel the audience to be physically present to gain the full experience. This aligns closely with Benjamin's argument that a traditional artwork's "here-and-now" quality is formed by being exhibited with a

sense of distance in a specific location. This means that, from the perspective of its "here-and-now" quality, AIGC art also fulfills the prerequisites for the generation of an "Aura."

AIGC art also subverts the formation mechanism of the "traditional Aura." First, it no longer relies on a physical "original"; its core is its unique algorithmic logic and architecture. Audiences attend an exhibition not to see a "genuine artifact" but to experience the differentiated immersive effects generated by the algorithm. More importantly, the formation of the Aura depends on the interaction between the audience and the work. Inside the exhibition, audiences explore, experience, and interact with the installation on their own terms, leading to a myriad of personal viewing experiences. Information about the audience—including their number, position, and interaction with the exhibition—is collected as data to participate in the real-time generation of the visuals, thus influencing the work's appearance. The audience is no longer just a "viewer" but also becomes a "creator," a relationship between the work and its audience that is unique to AIGC art.

In this light, while AIGC art aligns with the theory of the Aura to a certain extent, its internal generation mechanism has undergone a fundamental transformation. This difference means that the "Aura" possessed by AIGC art is distinct from the traditional "Aura"; it is a "digital aura," produced under the influence of new-era technology.

4.2. Challenges and hopes for AIGC art

Although AIGC art shows the potential to reshape the "Aura" in immersive exhibitions, its development path is still fraught with difficulties and crises. First, AIGC exhibitions are under the risk of falling into an excessive pursuit of technological and sensory spectacles, over-emphasizing grand visuals and shocking sound while neglecting intellectual depth and real-world significance. This trend risks making art superficial, replacing deep thought with sensory stimulation. Take VAN GOGH: AN IMMERSIVE JOURNEY as an example: while it provides a stunning immersive experience, it simplifies Van Gogh's complex and painful life into pleasant audiovisual effects, masking reality with a brilliant digital spectacle. When "experience" becomes overly dependent on pleasing the audience, art's critical edge and spiritual depth face the risk of dissolution. This phenomenon resonates with Baudrillard's theory of the "simulacra." He pointed out that a "simulacra is not a copy of the real, but a copy of a copy." [8] The fabrication, production, and simulation of signs cause the real to be gradually replaced by the simulacra; in our current era of rapid media and technological development, the simulacra can even possess a "hyperreality." A blind pursuit of technology can lead to works becoming detached from reality, turning into meaningless technological spectacles.

At the same time, AIGC art also faces challenges of originality and ethics. Its generation process relies on vast quantities of human-created artworks, which involves issues of copyright and data ethics. The boundary between a unique "digital original" and a complex "digital collage" is difficult to define. The question always remains: when audiences face an AIGC work, are they appreciating the artist's design, or are they merely over-interpreting random images generated by an algorithm?

5. Conclusion

In summary, AIGC art aligns with the logic of the "Aura" theory to a certain extent, yet its generation mechanism has undergone a fundamental shift—from a reliance on a physical original to a reliance on the interaction between algorithmic logic and audience experience. This has given rise to a "digital aura" based on the conditions of a new technological era. At the same time, however, challenges and hopes coexist: the development of AIGC needs to be vigilant against excessive

spectacle as well as ethical and copyright challenges. Its potential lies in expanding the frontiers of art by transforming complex and abstract data—such as scientific theories, historical archives, or the pulse of a city—into perceptible art forms. This allows art to transcend the imitation of the visible world and enter the realm of visually translating the invisible. Future immersive exhibitions may be able to use sensors to read an audience's emotions, heart rate, or even brainwaves, with AI then generating a bespoke audiovisual experience in real time. These are all directions worthy of further exploration. We can expect that the "digital aura," based on the unique experience, will shift the core of art from static objects to the dynamic and vital relationship between humans and the work.

Of course, this study has its limitations. The three cases selected for this paper are primarily large-scale, spectacle-oriented immersive exhibitions and are therefore insufficient to represent the full spectrum of AIGC art. Future research could cover a broader range of types and styles of AIGC exhibitions to continue deepening the meaning and significance of the "digital aura."

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