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Original Research Article

The Dialectic of Apollo and Dionysus in Interactive Art: A Review of «Machine Hallucination» and «Memories of Passersby»

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Abstract

Introduction: The present research employs the conceptual dichotomy of Apollo and Dionysus as a framework for analyzing AI-based interactive art, a dichotomy in which mathematical and algorithmic order is in tension with perceptual, emotional, and formal chaos. The present study seeks to answer the following questions: «How does AI-based interactive art redefine Dionysian esthetics in the digital age?» and «How does artificial intelligence, by redefining the process of creating art, eliminate the boundaries between order and chaos, control and randomness, and human and machine?»

Research Method: This study employed a qualitative approach and a descriptive-analytical-comparative design. In it, the confrontation between Apollo and Dionysus serves as a theoretical framework for analyzing unpredictable forms in AI-based art. The examples studied include «Machine Hallucination» by Refik Anadol and «Memories of Passersby» by Mario Klingemann, which were purposefully selected. The data were also collected through library studies and reputable electronic sources.

Findings: Artificial intelligence, by combining Apollonian algorithmic order (precise calculations) and Dionysian chaos (instinctive, unpredictable outputs), creates a new form of aesthetics. In the examined works, machines produce an aesthetic chaos of data and computation, transforming the audience into active creators. Additionally, the process of artistic creation transforms into an interactive and dynamic coexistence, erasing the boundaries between order and chaos, control and randomness, and human and machine; human interaction (movement, sensation) alters algorithms, making meaning collective and creativity post-human.

Conclusion: Interactive art based on artificial intelligence, utilizing algorithms such as generative adversarial networks, generative language models, and evolutionary algorithms, produces outputs that are unpredictable and beyond the designer's control. This process shapes an aesthetics centered on chaos intertwined with order and presents a new vision of the coexistence of humans and machines in the future of digital art.

Keywords

Interactive Art, Artificial Intelligence, Dionysus, Apollo, Generative Art, Philosophy of Nietzsche

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Introduction and Problem Definition

The efforts of artists have always been to transcend previous boundaries and approach unknown and sometimes unpredictable aspects. In the contemporary world, while artificial intelligence is considered a tool for producing works, it has also entered the realm of human thot and, in some cases, philosophical and artistic concepts in a novel way, leading to their redefinition. Such works, while transcending the traditional boundaries of art, pave the way for profound philosophical reflection on creativity, control, and randomness within the framework of artificial intelligence as an artist. New technologies such as artificial intelligence have challenged the boundaries of art. Alongside these developments, concepts such as chaos, disorder, logic, and order in the history of art have always played a role in shaping creativity and even forms of imagination that stem from humans' unstable mental and emotional states. In this context, the symbol of Dionysus, the god of wine, madness, and free-spirited dances, emerges from the darker aspects of human nature and is perceived in the realm of culture and art as a symbol of liberation against order; a state in which madness and chaos become the foundation for boundless and innovative creativity. The present research is based on an interdisciplinary framework in which concepts and methods from robotics and artificial intelligence interact with theoretical and aesthetic discussions in art. This approach reinterprets algorithm engineering with an emphasis on precision and efficiency, in conjunction with the dialectic of order and chaos, laying the groundwork to transform technical challenges into creative capacities for producing artistic works. From this perspective, the choice of research topic is intended to explore the conceptual links among smart technologies, the philosophy of art, and structures grounded in algorithmic order, data processing, and mathematical logic. Algorithms and neural networks in AI-based interactive art sometimes create results that are astonishing and noteworthy in their own right by utilizing concepts of chaos, disorder, and randomness. The study and interpretation of artworks created by artificial intelligence, which exist at the intersection of order and chaos, demonstrate how Dionysian concepts can be embodied in a logical, algorithmic structure within postmodern art. In the mythological tradition of Greece, Apollo symbolizes order, balance, wisdom, moderation, and rational structuring, while Dionysus represents ecstasy, abandon, chaos, liberation, and experiences filled with excitement. This duality holds a central place in Friedrich Nietzsche's philosophy of art, especially in his book «The Birth of Tragedy», where he argues that Greek tragic art results from the coexistence and tension between the Apollonian and the Dionysian. According to Nietzsche, authentic artistic creation does not arise from the complete dominance of one over the other, but from the dynamic interaction of these two opposing forces. Based on this, reinterpreting these concepts within the context of digital art and artificial intelligence can open a new horizon for understanding the relationship between algorithmic order and creative chaos. This research demonstrates how concepts such as chaos, disorder, and Dionysus, in conjunction with logical algorithms, lead to the creation of works in which order and seemingly endless madness coexist, producing a complex yet captivating space that not only creates beauty but also fundamentally challenges the viewer's understanding of the artwork. The present article, with fundamental objectives and a descriptive-analytical nature, seeks to answer the following questions: «How does interactive art based on artificial intelligence redefine Dionysian esthetics in the digital age? How does artificial intelligence, by redefining the process of creating art, eliminate the boundaries between order and chaos, control and randomness, and human and machine?» The aim of this research is to demonstrate how AI-

based interactive art, by combining adversarial network algorithms, generative models, or Apollonian evolutionary methods, and Dionysian random noise in the creation process, weakens the boundaries between order and chaos, control and randomness, and human and machine, thereby facilitating a broader interaction between the audience and the machine.

Research Method

The research method in the present study is qualitative and of a descriptive-analytical-comparative nature. In this context, the conceptual opposition of Apollo and Dionysus has been employed as a theoretical framework to explain the production of unpredictable forms in AI-based art. The research data were collected through the study of credible sources and the targeted analysis of notable works such as «Machine Hallucination» by Refik Anadol and «Memories of Passersby» by Mario Klingemann. The selection of these samples was made due to access to primary sources, the scientific acceptance of the works, and their referential credibility in the field of interactive art based on artificial intelligence. Additionally, the criteria for selecting these works included features such as direct use of artificial intelligence systems, interactive nature, emphasis on unpredictable forms, and the ability to analyze them in relation to the Apollonian-Dionysian dichotomy.

Research Background

The concept of Dionysian, from Greek mythology to Nietzsche's philosophy, regarded chaos as a creative and liberating force and found an avant-garde reflection in the twentieth century. However, with the advent of the digital age, this concept has taken on new dimensions, and art based on artificial intelligence, algorithms, and machine learning has emerged as a creative partner in the artistic creation process. In the following, while reviewing the relevant research background, articles with the closest content and thematic proximity to the main objectives and concerns of this research will be introduced and critiqued. «Astal et al.» (2024), in an article entitled «Interactive Digital Art Exhibitions: Enhancing Public Engagement through Technology in Fine Arts», using a mixed-methods approach (quantitative-qualitative), examined 200 individuals based on criteria such as age and familiarity with technology to evaluate the impact of interactive digital art exhibitions on public engagement. The findings indicate that virtual reality, due to its immersive nature, creates a more emotional experience, and demographic factors such as age and familiarity with technology influence the reactions. Additionally, interactive responses were stronger among younger, more tech-savvy visitors, who were more inclined to revisit such exhibitions. «Peng and Chen» (2024), in the article entitled «Smart Painting Exhibitions: Utilizing Internet of Things Technology Creating Interactive Art Spaces Sustainability», address the implementation of interactive art spaces using Internet of Things technology to provide a deeper and more successful experience for audiences. This innovation demonstrates the potential to create interactive art spaces and revitalize traditional painting exhibitions, with digital interaction enriching the artistic experience. The new approach unlocks artists' creativity and makes collaborative art accessible to audiences; the smart painting exhibition can serve as a model for integrating art and technology, paving the way for a more innovative future. «Anadol and Kivrak» (2023), in an article entitled «Machines that Dream: How AI- Human Collaborations in Art Deepen Audience Engagement»,

examine the collaboration between AI and humans in creating artworks and demonstrate how this coexistence deepens audience interaction. The main focus of this research is on ease of access, style diversity, and the ability to express creativity with AI tools. The article addresses how to improve the creation process through real-time feedback while preserving the work's authenticity, as well as the challenges of intellectual property and algorithmic transparency. «Rahbarinia and Mesbah» (2024), in their article entitled «A Simmelian Analysis of Constructing Interactive Art in Visual Space», examine two interactive works, Emotional Traffic and 01, and demonstrate that internet technologies enable the formation of new interactions that differ from reality. Virtual presence sometimes alienates; the freedom of movement makes the audience's experience more disoriented. The individual's identity is limited by technological controls. With increased participation, the experience's complexity and diversity grow, and the virtual space reflects Simmelian concepts. «Ghomi and Rikhtegaran» (2014), in their article entitled «Interpretating Nietzsche's Philosophy Based on the Theory of Game», argue that Nietzsche, in his interpretation of Heraclitus's philosophy, links the concepts of play, wisdom, and philosophy to the logic of logos. Heraclitus sees the world as a game of the gods, meaning not a serious, purposeful order but an eternal, aimless dance of opposites. Wisdom, according to Nietzsche, is a childish knowledge that accepts the world as a meaningless toy, and philosophy is the continuation of this playfulness, meaning not the search for absolute truth, but dancing in the chaos of existence. «Mahboubi Arani» (2013), in the article entitled «Nietzsche's Dionysian Approach to Life and Death», considers Nietzsche's Dionysian approach in «The Birth of Tragedy» and sees life and death as an eternal dance between birth and annihilation. Dionysus is a symbol of wild ecstasy, unity with existence, and the acceptance of death as part of the joyous cycle of life. As observed, existing research in the field of digital art often focuses on interactive art and its execution, and less on the topic discussed in this study, namely, the «fascinating interplay between structured inputs and unpredictable outputs». Therefore, the absence of research that not only redefines the relationship between the artist and the tool but also challenges the boundaries between machine and human actions is keenly felt.

Apollonian and Dionysian Concepts in Art

The Apollonian principles manifest in symmetry, clarity, delineation, and defined structure. These principles represent reality and ideal images, emphasizing harmony, beauty, and a coherent rational framework. In contrast, Dionysian art reflects an emotional, intuitive experience, chaos, and liberation from rigid, rational frameworks, and it is transformative. «Dionysus, in short, is the intoxication resulting from the release of affirming primal forces, and Apollonian is this affirmation in the form of nature and individuality, cloaked in beautiful illusion. Dionysus is the quest for the primordial in all existence, merging with the collective and being engulfed in the wave of unity, which is the affirmation of the will to oneself. Apollo, on the other hand, is the limitation of the will to boundaries, inner harmony, and beauty, and a mask over the chaos and lawless unity of everything, affirming the will to oneself in the form of the individual» (Heydari & Azizian, 2019). In summary, the Apollonian element lies on the side of balance, order, and structure, while the Dionysian element is on the side of chaos, ecstasy, and liberation. Artworks are usually created to establish balance and maintain a vibrant tension between these two elements. Nietzsche

believes that authentic art, especially ancient Greek tragedy, arises from the coexistence and convergence of these two elements. «The realization of the tragic is a very rare and yet very precious matter. When this pure balance occurs, it is an event that will influence both local and global culture for centuries. In such a way that Nietzsche considers the reference to the tragic in its purest sense, meaning its reconstruction, as the solution for the revival of culture and reaching its peak of sublimity and brilliance» (Nietzsche, 1998, 142). The coexistence of these two opposing elements leads to a complex, transcendent, and sometimes contradictory experience. This experience may not be fully explained or understood; therefore, it can only be lived.

Artificial Intelligence and Algorithmic Logic in Art

In defining an algorithm, it should be said that it is a set of instructions that, in a step-by-step, predictable, and controlled manner, enables the repetition and reproduction of desired objectives. Artificial intelligence (AI), one of the advanced and fascinating fields of computer science, has garnered significant attention in recent decades. Artificial intelligence enables us to create machines capable of performing tasks requiring human intelligence (Aghornluee, 2023). This means the machine's behavior and decisions result from data analysis based on a set of logical rules and mathematical calculations. In the realm of art, the advent of artificial intelligence has given rise to a new kind of creativity and aesthetics. «The use of technology in art dates back to the 1950s and 1960s. When artists and researchers began experimenting with computers and algorithms. During this period, the concept of computer art emerged, and artists like Nake Frieders and Cohen Harold began creating artworks using computers. Nake Frieder was one of the first artists to use algorithms to create paintings and abstract works. He produced artworks in FORTRAN, recognized as examples of algorithmic art» (Papi and Dadvar, 2024). Creativity arising from artificial intelligence does not come solely from humans; rather, it is the result of the combination of humans, machines, and data. Contemporary artists create works using tools such as artificial neural networks, deep learning, and generative algorithms. «Creating artworks using algorithms is one of the earliest and most significant applications of artificial intelligence in art. In this method, artists use mathematical algorithms and programming to create artworks» (Papi and Dadvar, 2024). These works, on the surface, are born from a planned logic, but deep down, they also carry a kind of instability, mutability, and unpredictability. In this context, the ancient conflict between the Apollonian and the Dionysian is once again repeated in technological form. In fact, algorithms, due to their order, structure, and coherence, are «representatives of the Apollonian spirit», while unpredictable and chaotic outputs are «representatives of the Dionysian force». Therefore, artificial intelligence cannot be merely considered a tool in the service of art; rather, it can be regarded as part of the new aesthetic process.

Interactive Art Based on Artificial Intelligence and the Role of the Audience

In contemporary art, a new platform has been created for the active and conscious participation of the audience. «The focus of interactive art, like all art forms that have aimed for audience participation since the 1960s, is on active agency, authorship, creation, community, and collective responsibility. Also, given the goal of interactive art to promote

broader social inclusion, the audience's presence in this art becomes particularly important» (Zojaji & Rahbarnia, 2015). Interactive art nurtures, completes, and gives meaning to the work through interaction. The audience is a vital part of the aesthetic system and plays a role in the production and transformation of the work. This intervention takes shape through various pathways, including path selection, data input, body movement, voice commands, and biological responses (e.g., heart rate or brain waves). In such a context, the relationship among the artist, the audience, and the artwork is redefined; the audience's role transforms, and they become co-creators of the artwork. This conceptual transformation has been made possible, on the one hand, by interactive technologies such as virtual reality, sensors, machine learning, and artificial intelligence, and, on the other hand, by contemporary discourses on audience participation, self-awareness, and creativity in art production. «The interactivity of an artwork means that a space is provided for the audience to create and generate more actions, thereby showcasing broader dimensions of the piece. Such artworks, using electronic and digital tools such as sensors and cameras, can receive various inputs from user actions and provide visual, auditory, tactile, and olfactory outputs to the audience» (Rafizadeh Akhavan et al., 2017). In the structure of this kind of art, interaction is defined not as an ancillary addition, but as an existential core. In interactive art, meaning is not merely born from the artist's intent, but is shaped in a process that continuously redefines itself through audience reactions. The characteristic of interactive art arises from its fundamental difference from static paintings, in which audience input dynamically alters the work and shapes its structure. The concept of the Apollonian audience refers to an individual with a conscious and organized mindset who creates a purposeful work through logical data, selection, and analysis; however, in digital and intelligent interactive art, a deeper engagement with the audience occurs, so while there are «logical inputs», the «output is unpredictable». Thus, a dynamic relationship forms between inputs and the output of artificial intelligence, which sometimes takes on a Dionysian and random character.

Chaos-Generating Algorithms in the Process of Modern Aesthetics

Algorithms such as Generative Adversarial Networks[1] (GANs), Generative Language Models (GPTs), and Evolutionary Algorithms often produce outputs that go beyond the direct control of the initial designer and exhibit chaotic behavior. Of course, it should be noted that in these algorithms, chaos is not defined as senseless disorder, but rather as a generative and creative mechanism. For example, in an algorithm like the adversarial networks algorithm, there are two networks that behave in opposition to each other. These two networks undergo a dynamic process in which the system's initial order is continuously disrupted and reconstituted. As a result, a highly repeatable algorithmic struggle emerges, producing images or forms with unusual and unpredictable characteristics. This is exactly like what happens in Dionysian art. There, too, breaking established forms was considered an important part of the artistic creation process. In interactive art, regular input algorithms are exposed to human variables. Here, the audience with their actions (such as sound, movement, touch, selection, feeling, etc.) Causes chaos to emerge in the system. So, the audience's interaction affects the input algorithm, creating a random effect that never repeats in the same way.

The Apollonian Role of the Audience on the Dionysian Output of the Interactive Work

In AI-based interactive art, the resulting work is not predetermined and fixed. This work was created through a dynamic, repeatable interaction between the algorithm and the audience. «The interaction of audiences with interactive digital artworks is understood through embodied perception, and this interaction results in no distinction between subject and object in the interactive digital artwork, with both shaping each other» (Nozad, 2020). Considering this characteristic in AI-based interactive art, one cannot overlook the impact of the audience's psychological, cultural, and perceptual expectations on the quality of the output. The Apollonian audience, with a logical, structural mindset and a tendency toward order, engages in interaction and experience, consciously or unconsciously; however, this very presence inadvertently becomes a catalyst for disorder. This situation can be explained by the fact that the audience's analytical and logical mind serves as nonlinear, creative input for the algorithm; consequently, the output often emerges in ways that exceed the audience's expectations and reflect their presence and participation as meaningful chaos. Therefore, it can be said that the Dionysian nature of the output is not merely an inherent property of the generating algorithms, but rather this characteristic emerges as a result of the interaction between the algorithm and the input derived from the Apollonian mind of the audience. What is perceived as logical and Apollonian in the audience's mind acts as nonlinear, disruptive data for the algorithms; data that transforms the order of the output and leads to the formation of a kind of meaningful chaos.

Case Study of Two Interactive Art Pieces Based on Artificial Intelligence with Dionysian Outputs: «Machine Hallucination» and «Memories of Passersby»

To better understand the aforementioned discussions, two examples of interactive art based on artificial intelligence with chaotic outputs will be introduced and examined. It is worth mentioning that these two works were selected from existing pieces in the field of interactive art based on artificial intelligence that produce unpredictable, chaos-driven outputs, owing to their ability to reference credible scientific sources.

1. «Machine Hallucination» Project by Refik Anadol: In this work, Refik Anadol, a Turkish-American media artist and a leading professor in the media arts program at UCLA, attempts to present a representation of how artificial intelligence dreams or imagines the archive of modern art (Figs. 1 & 2). This art project, which was exhibited in 2022, used 138,151 foundational text data points published by the Museum of Modern Art (MoMA) in New York. It includes images of works, descriptions, creation years, and classifications, as well as a generative adversarial network trained to navigate this space. The project was trained in a 1024-dimensional space using custom software to browse and instantaneously generate creative forms. This training process provided conditions for different pixels, new colors, and chaotic or dreamlike forms to emerge. In this process, artificial intelligence acts as a creative brain, transforming data into dreamlike illusions. The outputs of this work are essentially Dionysian, as AI algorithms transform orderly forms into instinctual and unconventional flows by adding potential and random noises. For example, urban structures transform into waves of color and organic forms or fluid, melting clouds, as if they have immersed themselves in a Dionysian dance described by Nietzsche in ancient rituals. This controlled chaos arises from the interplay between two parts of artificial intelligence: one

that generates images and the other that evaluates them. As a result, the initial order of the data is continuously disrupted and reconstructed, and unpredictable patterns emerge, with no exact repetition and each execution being uniquely shaped. Human interaction is the key to this chaos. The viewer evokes «dreams» with gestures or voice, and artificial intelligence blurs the boundaries between algorithmic control and randomness, transforming creation into an instinctive and collective process. In this project, Anadol transcends exclusive human control in artistic creation and fosters a symbiosis between humans and machines. Here, artificial intelligence is not a passive tool but a Dionysian partner that extracts creative instincts from the depths of digital data. This approach blurs the boundaries between human and machine, such that the viewer appears as the creator and the artificial intelligence as the «dreamer», with order and chaos existing together in a dynamic equilibrium. Structured data-based algorithms are intertwined with the chaos arising from human interactions, transforming creativity from a static state into a dynamic and inclusive process. This project revives the Dionysian esthetics in the digital realm, where chaos is not a destructive force but a source of transformation, and the outputs create static experiences that invite the viewer to immerse themselves in the work's instinctual flow. «Dream and Machine Imagination» demonstrates how artificial intelligence can eliminate the traditional boundaries of art and transform artistic creation into a continuous symphony of order and chaos (Anadol & Kivrak, 2023).

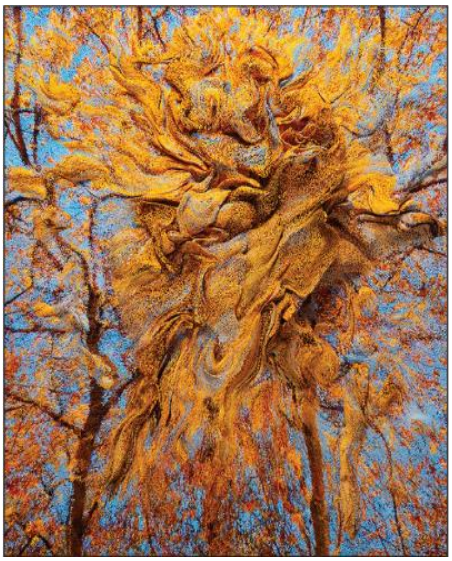


Fig. 1. «Machine Hallucination: Nature Dreams» (2021), König Gallery, Berlin. Source: Anadol & Kivrak, 2023.



Fig. 2. «Machine Hallucination: Nature Dreams» (2021), König Gallery, Berlin. Source: SEGD, 2021.

2. «Memories of Passersby» Project by Mario Klingemann: This work, created in 2018, is based on an algorithm trained in the field of deep learning and utilizes thousands of portraits from historical paintings. This work is presented as two 65-inch monitors with classic frames, installed on a gallery or home wall. In each frame, a small computer is

embedded, continuously generating new images of imaginary faces. In fact, the system, relying on the data it has been trained on, represents a ghost of historical reality. The algorithm Klingemann employs in this work is a generative adversarial network. In such a way that the system is trained on a large collection of European portraiture from the 18th to the 20th centuries. As it seems, the system follows Apollonian logic from a structural and internal perspective. Passersby stand in front of the device, have their faces scanned, and the artificial intelligence transforms them into dynamic, evolving portraits. Therefore, artificial intelligence, as an explorer of human identity, revives long-forgotten memories and transforms them into fluid, unstable currents. The outputs of the work have a Dionysian nature, and the confrontation between the algorithms, one as a dreamer and the other as an evaluator, simultaneously disrupts and reconstructs the order of faces. As a result, the portraits become unusual and unpredictable. The melting of facial features and the presence of instinctual elements that break fixed forms evoke the release of instincts in Nietzsche's philosophy, transforming the chaos of each portrait into a unique experience that confronts the viewer with the illusion of memories. Human interaction, including the presence of a passerby, movement, or a change of state, incites this chaos, affects the algorithm's performance, and blurs the line between mechanical control and human randomness to the point that the creation process becomes an instinctual dance. Klingemann thus hybridizes the process of creation, an experience in which artificial intelligence becomes the Dionysian partner of the artist, extracting unconscious instincts, blending historical order with momentary chaos, and transforming art into a democratic experience. This work also challenges the issue of privacy and redefines identity as a bridge between the past and the future. Ultimately, it revives the Dionysian aesthetic; chaos is a source of revelation, and portraiture becomes a continuous flow of order and disorder (Spratt, 2018). Nietzsche's philosophy describes the contrast between Apollo (order, logic, and form) and Dionysus (chaos, ecstasy, and instinct) as two complementary forces of life or a dance between control and liberation. Inspired by Nietzsche's Dionysian approach to life, death, and play, this dichotomy is also recreated in AI-based interactive art, where Apollonian, orderly algorithms sometimes intertwine with Dionysian human and environmental interactions, redefining the boundaries of artistic creation. In the work «Machine Hallucination» by Refik Anadol, generative algorithms transform orderly data into fluid and unpredictable waves. The viewer's movement also disrupts this flow, creating creative chaos. This situation can be seen as the death of fixed light lines and the birth of a mechanical dream; a dream reminiscent of Nietzschean play between order and liberation. In the work «Memories of Passersby», neural networks also memorize faces, but with human gaze and interaction, they transform into living and distorted images. Here, the Apollonian order structures memory, while the Dionysian interaction disrupts it. Based on Nietzsche's thot on life and death, this situation can be seen as a death for the fixed identity of images and a birth for collective memories; a process that turns the audience into an active participant in the game. The examination of the mentioned works shows that AI-based interactive art can elevate the dialectic of Apollo and Dionysus from an aesthetic perspective to an experiential paradigm. This convergence transforms the creative process into a non-linear, unpredictable system that leverages generative algorithms and human feedback. The Dionysian chaos in these works randomly increases creative capacity, while the Apollonian order ensures the piece's structural stability. Therefore, this model not only facilitates collective creativity but also possesses the capacity to redefine post-human identity.



Fig. 3. «Memories of Passersby» by Klingemann (2018). Source: Masoumi, 2024.



Fig. 4. «Memories of Passersby» by Klingemann (2018). Source: Onkaos, 2025.

Table 1. Convergence of the Apollonian and Dionysian in Chaos-Oriented Interactive Art. Source: Authors.

Nietzschean Element	Apollo (order)	Dionysus (Chaos)	Convergence in Artificial Intelligence	Example in «Machine Hallucination»	Example in «Memories of Passersby»
Symbol	Logic, form, fixed boundaries	Instinct, passion, fluid flow	Algorithm + human interaction = dynamic creation	Fixed optical lines	Initial face registration by a neural network
Role in Creation	Initial structure (raw data)	Disruption and transformation (increased diversity and chaotic innovation)	Unpredictability and non-linearity of the outcome	The movement of the observer causes a change in the flow of light.	The human perspective of the audience distorts live images.
Impact on the Audience	Passive audience	Active and interactive creator	Creating democratic creativity	The birth of machine imagination from the movement of the audience	The birth of the collective memory of passersby
Philosophical Consequence	Sustainability, the death of form	The birth of collective life	Posthuman identity, digital tragedy	The dissolution of the boundary between form and dream and the birth of a new one.	The death of a fixed identity and the birth of new memories

Conclusion

In the digital age, interactive art based on artificial intelligence, using generative adversarial algorithms, generative language models, and evolutionary algorithms, can redefine Dionysian esthetics, where the instinctual and creative chaos desired by Nietzsche is born from machine algorithms and is no longer limited to ancient rituals or human imagination, but rather becomes a dynamic and inclusive process. In this context, chaos is not seen as mere disorder but as a creative and innovative source of beauty. Interactive art, by utilizing generative and interactive algorithms, intertwines the Apollonian order of algorithms,

precise calculations, data structures, and mathematical logic, with the Dionysian chaos. Algorithms provide a structured and repeatable framework, but human interaction, such as bodily movement, sound, touch, or the audience's spontaneous choices, injects chaos and transforms the outputs into fluid, non-linear, and instinctive experiences. This fusion liberates beauty from classical symmetry, geometric precision, and conscious control, steering it toward spontaneous events and the sudden emergence of meaning from chaos. In the meantime, the new Dionysian beauty finds meaning in emotional immersion, a sense of unity with the environment, and liberation from individual constraints, transforming art into a tool for exploring the collective unconscious. In the two examined works, this redefinition is clearly evident. In «Machine Hallucination» by Refik Anadol, the fluid and melting streams of images formed from urban data and live inputs from the audience break the boundaries of reality and create an immersive experience, in such a way that the viewer participates in a primal dance with the machine and loses the boundaries of time and space. In «Memories of Passersby», a work by Mario Klingemann, the perishable and transformable portraits that emerge from the interaction of intelligent algorithms with the faces of passersby draw identity into an instinctive and unstable dance; a place where faces become distorted, melt, and oscillate between recognition and unrecognizability. These works prompt the audience to reflect on the fluidity of existence without reaching a definitive conclusion. Such works demonstrate how artificial intelligence can transform Dionysian esthetics into a participatory and inclusive realm, so that the audience is no longer merely a consumer of the work but, through interaction, becomes an active creator of it, liberating art from the monopoly of artistic elites. This approach transcends classical frameworks by introducing concepts such as creativity, beauty in controlled chaos, and inspiration arising from dynamic, multilayered interaction, thereby creating new meanings in the interactive cycle between human and machine. As a result, digital art is not only a representation of reality but also the creation of a new reality from the Dionysian machine energy. Artificial intelligence also transforms the boundaries between order and chaos, control and randomness, and human and machine, turning artistic creation from an individual, static, and entirely human activity into an interactive, dynamic, and collective coexistence. In this situation, the traditional process of creating a work, in which the artist has complete control over the canvas or form, gives way to a system in which algorithms serve as a creative partner. Artificial intelligence is based on mathematical order, algorithmic logic, and data structure, transforming every input, from archival data to live senses, into a calculable and structured output; however, within the framework of reciprocal and generative algorithms, random, sensory, and human factors, such as potential noise, momentary interactions, and even algorithmic errors, evoke the element of chaos and make the outputs unpredictable, instinctive, and transformative. This blurring of boundaries can be observed in the very dynamics of the process, where algorithmic control intertwines with the randomness introduced by human inputs and errors, transforming creation into a continuous dance of reconstruction and disorder. In this way, machine and human dissolve their boundaries in an endless dialogue. For example, in «Machine Hallucination», audience inputs (movement or sound) disrupt the order of the algorithmic system, transforming it into instinctive, fluid flows, in which human randomness challenges machine control, and the unique output of each performance blurs the boundary between control and randomness. In «Memories of Passersby», the confrontation between two algorithms, one generating imaginary images and the other evaluating them, transforms human faces into unusual,

merging forms. In this context, the passerby's interaction extracts chaos from the historical order of portraits, without any guarantee of reproducibility. In this process, the boundary between human and machine also completely dissolves, meaning that artificial intelligence is not a passive and obedient tool, but an active and creative partner that connects human instincts (intuition, emotion) with machine calculations (big data and statistical patterns), transforming the artist, audience, and system into collective agents in the creation process. This redefinition shifts creation from imitating previous forms (such as classical styles) to producing conceptual and visual chaos; a place where the machine «learns» from humans and humans «draw inspiration» from the machine, and the creative identity transforms into a post-human phenomenon. Ultimately, this transformation turns algorithmic modern art into a new aesthetic experience; one that transforms traditional binaries, such as order and chaos, human and machine, and reason and intuition, into a multi-layered, generative, and creative connection. In such a context, new meanings arise not through separation but through the dynamic interaction among humans, data, and machines, transforming artificial intelligence into a bridge between Nietzsche's philosophy and the digital future. This vision not only transcends previous boundaries but also calls humanity to reflect anew on its creative identity in an era where the machine has become an extension of its instincts.

Research Suggestions

Given the growing role of artificial intelligence in shaping the artistic experience, future research should examine the various dimensions of creativity and education in AI-based interactive art. In particular, one can address how machine learning processes and human interaction can be used to foster artistic creativity and redefine art education methods in digital environments.

Author Contributions

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Appendix

1. Generative Adversarial Networks (GAN): A type of artificial intelligence model. The architecture of a GAN consists of two separate neural networks that are positioned against each other in a game-like scenario. The first network, known as the generator network, tries to create fake data that appears real.

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