EXPLORING PATTERNS AND TEXTURE THROUGH ARTIFICIAL INTELLIGENCE ANALYSIS

BY

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Abstract

The 21st century has witnessed a wide spread of diverse artistic movements and styles, powered by globalization, technological advancements, and cultural exchange. Artists encounter profound challenges on how to innovate and navigate art while honouring tradition. The emergence of artificial intelligence (AI) in the world has sparked new possibilities and debates within the realm of art. These advancements are propelling artistic evolution, spurring artists to push the boundaries of convention, and seeking individuality amid a discordance of voices. Amidst this creative turmoil, they remain fastened to their cultural roots, striving to distort tradition without severing the thread of heritage. This means that even as they innovate, they are mindful of the roots of their art and seek to preserve its fundamental principles and themes. This paper investigates the intersection of art and artificial intelligence in modern Nigerian art practices by exploring patterns and texture in the area of textile and fashion industries. The paper also aims to explore the evolving relationship between AI and Nigerian art, shedding light on how AI technologies are shaping artistic practices and perspectives in the textile industry in the country. The paper reveals that 21st-century artists are geared toward exploring new ways of innovations in art creations to showcase interrelationships with artificial intelligence (AI). In Nigeria, a country rich in cultural heritage and artistic expression, artists are increasingly exploring the integration of AI technologies into their creative processes. Thus, the paper concludes exploring and adopting artificial intelligence (AI) in art practice is commendable. It recommends that exploring artificial intelligence (AI) in art practice should be encouraged.

Key Words: Artificial Intelligence, exploring, tradition, texture, Art, technology.

INTRODUCTION

Artificial intelligence (AI) refers to the simulation of human intelligence processes by machines, particularly computer systems. These processes include learning, reasoning, and self-correction. AI systems are designed to perform tasks that would typically require human intelligence, such as visual perception, speech recognition, decision-making, and language translation. Artificial intelligence has permeated various aspects of contemporary life, and its influence on the arts is no exception. In Nigeria, where artistic traditions blend with modernity, artists are embracing (AI) Artificial Intelligence as a tool for exploration and innovation in their artworks.

One of the most important and significant impacts of (AI) Artificial Intelligence on Nigerian art practices is evident in the realm of creative processes with textiles. Artists are leveraging (AI) artificial intelligence algorithms and machine learning techniques to generate novel ideas, patterns, and compositions. By harnessing the computational power of AI, Nigerian artists are able to explore new realms of creativity, transcending traditional limitations and conventions. Artists also experience limitless possibilities for innovations and creativity in design technologies. Moreover, AI serves as a collaborative partner for Nigerian artists, facilitating dialogue and interaction between human creativity and machine intelligence. Through generative adversarial networks (GANs) and other AI-driven tools, artists engage in a symbiotic relationship with (AI) artificial intelligence, co-creating artworks that blur the boundaries between human and machine production. This collaborative approach not only expands the artistic repertoire but also challenges preconceived notions of production and creativity. Artists often experiment with new materials, technologies, and techniques to push the boundaries of traditional art forms. This might involve combining traditional mediums with digital tools or exploring unconventional methods of creation.

A clear example is this work of art by Addey-Dixon, G (2021) on the ‘’Exploration of the Aesthetic Value of Ekpeye Chieftaincy Coronation on Fabric: A Mix Media Experimentation with Batik and Applique’’ with the adaptation of Ekpeye traditional motif on fabric for cultural identification. The artist produced the textile artwork employing batik techniques to produce fabrics with the adaptation of Ekpeye traditional cultural motifs symbols of *Okele* (metal gong) and *Ewolo Anya* (horsetail) of Ekpeye people for cultural identification. She further explored the possibility of adapting the traditional symbolic motifs of the Ekpeye people using AI artificial intelligence-generated approach to produce designs on a T-shirt. The outcome of the adaptation version of the AI has given the production a unique design different from the conventional batik design produced. The exploration with (AI) artificial intelligence machine production produced a design that has a unique design outlook but without altering the traditional symbols and aesthetic values of the Ekpeye traditional motifs.



Batik version of *Okele* and *Ewolo Anya*



AI generated version of *Okele* and *Ewolo Anya*

The Impact of Artificial Intelligence on Art

The impact of artificial intelligence on art has been profound and multidimensional. Moreover, the intersection of art and technology, including AI, has been growing globally. By harnessing AI algorithms, artists can explore new artistic possibilities, generate novel ideas, and push the boundaries of traditional artistic practices. In addition to its role in artistic creation, (AI) artificial intelligence is also being employed as a tool for cultural exploration and expression in Nigerian art. Many artists draw inspiration from a diverse range of cultural influences, blending traditional and contemporary elements to create hybrid styles that reflect the complexities of modern society. This approach allows them to explore the tensions between tradition and innovation in their work. Moreover, artists engage in critical reflection on the history and evolution of art, questioning established norms and conventions while also drawing on the rich legacy of artistic traditions. This self-awareness allows them to navigate the challenges of balancing tradition and innovation with a deeper understanding of the broader artistic landscape.

By integrating (AI) artificial intelligence into their practice, Nigerian artists are able to research deeper into their cultural heritage, reimagining traditional motifs and themes in contemporary contexts. Also, artists use AI-driven algorithms to analyse and interpret cultural data, uncovering hidden patterns, narratives, and perspectives within Nigeria's rich cultural tapestry.

Furthermore, Artists and researchers have developed (AI) artificial intelligence systems capable of creating paintings, music, poetry, and other forms of art. Also, AI tools can serve as creative collaborators for artists, offering new sources of inspiration and facilitating experimentation. By harnessing AI algorithms, artists can explore new artistic possibilities, generate novel ideas, and push the boundaries of traditional artistic practices. Aside these benefits, AI is increasingly being

used in art conservation and restoration efforts. AI algorithms can analyse images of deteriorating artworks, identify areas of damage or deterioration, and recommend appropriate conservation techniques. Additionally, AI-powered tools can digitally restore damaged or faded artworks, preserving them for future generations.

Another benefit of exploring AI artificial intelligence technologies is that they can be used to personalize and customize artworks based on individual preferences and characteristics. For example, AI-powered algorithms can generate personalized portraits, music playlists, or visualizations tailored to the unique tastes and preferences of each viewer. Furthermore, AI technologies are being employed in the art market for tasks such as price prediction, trend analysis, and artwork recommendation. AI-powered algorithms can analyse sales data, market trends, and social media activity to identify emerging artists, predict art market fluctuations, and recommend artworks to collectors and buyers.

The Challenges of Artistic Expression in the 21st Century

The proliferation of artistic movement in the 21st century has witnessed a diverse artistic movement in styles and art approach coupled with the advancement of globalization, technological advancements, and cultural exchange. As a result, artists are constantly pressurized to push the boundaries of traditional art forms, seeking to carve out their own distinct identities in a crowded artistic landscape. Aside from the attractive benefit Artificial Intelligence has to offer in the art world, it also bedevilled with its challenges. The challenges of (AI) artificial intelligence-generated artworks often challenge traditional notions of production and creativity, blurring the distinction between human and machine-generated art. Therefore, artists face so much pressure to develop a unique style and pattern that sets their work apart. This often involves experimenting

with unconventional techniques, materials, and concepts, pushing the boundaries of what is considered traditional or conventional in art.

While artists may strive to innovate and distort traditional forms, they are also keenly aware of the importance of retaining the natural synthesis of their indigenous art styles and techniques. This delicate balance requires artists to tread carefully, ensuring that while they push the boundaries of creativity, they do not lose sight of the cultural and artistic heritage that informs their work. This means that even as they innovate, they are mindful of the roots of their art and seek to preserve its fundamental principles and themes. Artists are often challenged and strive to maintain a connection to the natural synthesis of their cultural or artistic heritage.

To illustrate this challenge, we can look at various artists and artistic movements that have emerged in the 21st century. For example, contemporary Indigenous artists like. Nike Davies-Okundaye, a well renowned Nigerian textile artist is recognised for her textile prints that often incorporates elements of culture and commentary on contemporary society. Nike became famous for her modern approach to traditional themes in her colourful batik, paintings, mixed media works, and prints that often incorporate elements of Nigerian Yoruba culture and compliments on modern society. Her techniques and use of colours have established her as a household name in textile design and as a result of her unique approach of fusing traditional styles with modern techniques. Nike Davies-Okundaye chooses to continuously reference *Adire* patterns in her artwork which addresses issues relating to cultural identity. Many artists produced artworks that combine modern western art forms with tradition and also use their work as a means of engaging with pressing social and political issues, drawing on both traditional and innovative artistic techniques to provoke thought, inspire change, and challenge the status quo. This socially engaged approach allows artists to address contemporary challenges while also honouring the legacy of artistic

activism. For instance, African American looking to connect with their African heritage saw Osogbo artists as the ‘real deal’ because they were more traditional, keeping to their cultural heritage while blending with modernity.

Other Nigerian artist that is known for her multimedia artworks is Prof Cyril -Egware. Pamela Cyril-Egware is a textile and fashion artist as well as an astute scholar. Her textile fabric is drizzled with an air of superior manipulation of colours, form, and symbolism showcasing the traditional influences for cultural identification.

Artists like Jaune Quick-to-See Smith and Jeffrey Gibson also blend traditional Native American art techniques with modern materials and concepts, creating works that are both innovative and rooted in their cultural heritage. Similarly, street artists like Banksy challenge societal norms and expectations through their unconventional use of public spaces as a canvas for social and political commentary. While their work may push the boundaries of traditional art forms, it remains deeply connected to the cultural mood of our time.

However, the integration of (AI) artificial intelligence into Nigerian art practices also raises ethical and societal implications that warrant careful consideration. Questions regarding algorithmic bias, data privacy, and the impact of automation on artistic labour emerge as artists navigate the complex terrain of AI-driven art production. Moreover, the democratization of AI tools and technologies presents both opportunities and challenges for Nigerian artists, highlighting the need for equitable access and ethical frameworks in AI-driven art practices.

Conclusion

The connection of art and artificial intelligence (AI) in modern Nigerian art practices presents a dynamic landscape where tradition meets innovation, and cultural heritage intertwines with

technological advancement. Nigerian artists are leveraging (AI) as a tool for exploration, experimentation, and creative expression, pushing the boundaries of traditional artistic practices while retaining a deep connection to their cultural roots.

Through the integration of (AI) artificial intelligence algorithms and machine learning techniques, Nigerian artists are expanding their artistic collection, generating novel ideas, and engaging in collaborative partnerships with (AI) artificial intelligence systems. This symbiotic relationship between human creativity and machine intelligence not only fosters innovation but also challenges conventional notions of artistic production and creativity.

However, alongside the opportunities afforded by AI-driven art practices, there are also ethical and societal implications that require careful consideration. Artists must navigate issues such as algorithmic bias, data privacy, and the impact of automation on artistic labour.

Equitable access to AI tools and technologies is crucial to ensuring that all artists, regardless of background or resources, have the opportunity to engage with AI-driven art practices. This requires efforts to address barriers such as cost, technical expertise, and infrastructure limitations. Initiatives aimed at providing training, resources, and support to artists from diverse backgrounds can help level the playing field and ensure that AI-driven art remains accessible and inclusive.

Recommendations

1. Interdisciplinary collaboration is very important between artists, technologists, ethicists, and policymakers to develop ethical guidelines and frameworks for artificial intelligence AI-driven art practices. By bringing together diverse perspectives, stakeholders can address complex challenges and ensure responsible innovation in the intersection of art and AI.

2. There should be increase awareness among artists and the broader community about the opportunities and challenges posed by artificial intelligence (AI) in art. Also, there should be provision for training and resources to empower artists to leverage artificial intelligence (AI) tools responsibly and ethically in their creative practice.
3. It is also important to invest in research and development initiatives that explore the potential of artificial intelligence (AI) in art and address key ethical and societal concerns. Also, support projects that investigate algorithmic bias, data privacy, and the impact of AI on artistic labour to inform policy and practice. Moreover, advocating for equitable access to AI tools and technologies, particularly among marginalized communities and emerging artists should be encouraged. Also, promoting initiatives that provide training, resources, and support to ensure that all artists have the opportunity to engage with AI-driven art practices.
4. There is need to foster open dialogue and critical reflection within the artistic community about the implications of artificial intelligence (AI) in art. Encourage artists to explore the ethical dimensions of their work and consider the broader societal impact of AI-driven art practices.
5. Finally, by embracing AI as a tool for exploration and innovation while upholding ethical principles and preserving cultural heritage, Nigerian artists can chart a path towards a more inclusive, responsible, and vibrant artistic future.

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