

The digital palette of the future: The evolution of the artist's role in the era of neural networks

La paleta digital del futuro: la evolución del papel del artista en la era de las redes neuronales

Chebotarova Iryna¹, Khovanets Anna¹, Hrozian Yakov²

¹ Department of Media Systems and Technologies, Kharkiv National University of Radio Electronics.

iryna.chebotarova@nure.ua, anna.khovanets@nure.ua

² Founding Designer, Lumos AI, San Francisco, California, USA.

yasha.grozian@gmail.com

Abstract

The rapid integration of generative artificial intelligence (GenAI) into the visual arts has ushered in a new era, comparable in scale to the invention of photography in the 19th century. Technologies based on diffusion model architectures and Generative Adversarial Networks (GANs) have ceased to be merely tools of automation. Today, they act as full-fledged co-creators, radically reshaping the landscape of digital creativity. This paper is dedicated to exploring the transformation of the artist's identity: from a creator-executor to a curator of algorithmic processes. The article thoroughly analyzes the shift in focus from technical execution to intellectual intent, examines the issues of authorship and uniqueness, evaluates the concept of the "Black Box," and addresses the complex ethical dilemmas surrounding the use of intellectual property for model training. As a means to resolve the crisis of trust between algorithm developers and the creative community, the potential of non-fungible tokens (NFTs) and blockchain verification technologies is examined. It is substantiated that the future of digital art depends on achieving an ethical symbiosis where human empathy, contextual understanding, and critical thinking merge with the computational power of algorithms to create fundamentally new creative visualizations.

Keywords: generative artificial intelligence (GenAI), diffusion models, generative adversarial networks (GANs), prompt engineering, transformation of the artist's identity, Black Box problem, data ethics, NFT, blockchain, technological symbiosis.

Introduction

The rapid integration of generative artificial intelligence (GenAI) into the visual arts has ushered in a new era, comparable in scale to the invention of photography in the 19th century. When Louis Daguerre and Joseph Nicéphore Niépce presented the world with the first stable images captured through chemical-mechanical means during the first half of the nineteenth century, the traditional art community experienced a profound ontological shock. Upon seeing the first daguerreotype, the French painter Paul Delaroche famously exclaimed a phrase that became an art-historical expression: *"From today, painting is dead!"* (Benjamin, 1935). The fears of artists were purely pragmatic: the precision of replicating reality, which previously required decades of daily labor, the study of perspective, and anatomy, was now accessible to anyone who could afford an optical camera and chemical reagents. However, art history proved these apocalyptic predictions wrong. Photography did not destroy painting; instead, it liberated it from the utilitarian function of documenting reality, copying portraits of the elite, and recording historical events. This technological revolution forced artists to seek new meaningful forms, which directly catalyzed the emergence of Impressionism, Expressionism, Cubism, Surrealism, and, ultimately, pure Abstractionism. Art shifted from the domain of "how to depict" to the domain of "why to depict" and "what exactly to depict."

Today, in the first third of the 21st century, we are witnessing a similar tectonic shift in scale, though occurring at a significantly accelerated pace. Technologies based on diffusion model architectures (such as Midjourney, Stable Diffusion, DALL-E 3, Adobe Firefly) and Generative Adversarial Networks (GANs) have ceased to be merely tools for automating routine operations, such as color filling, skin retouching, or image cropping. They have transformed into full-fledged cognitive environments. Modern neural networks act as full-fledged co-

creators, radically reshaping the landscape of digital creativity and transforming the very essence of the creative process.

The relevance of this study stems from the fact that artificial intelligence tools are being integrated into the production pipelines of game studios, animation companies, branding agencies, and architectural bureaus at an unprecedented speed. This creates an urgent need to theoretically re-evaluate the status of the creator. This paper is dedicated to exploring the transformation of the artist's identity: from a creator-executor to a curator of algorithmic processes. We aim to analyze how artistic qualification requirements are changing, what aesthetic and conceptual challenges the phenomenon of autonomous image generation brings, and how legal and technological tools, particularly blockchain, can help resolve the global crisis of trust among participants in the artistic process.

From executive mastery to curatorship: the evolution of toolsets

For the past four decades, since the advent of the first personal computers and graphic editors, a digital artist's mastery was measured primarily by their proficiency in complex software. Industry standards included raster graphics packages (Adobe Photoshop, Corel Painter), vector modeling (Adobe Illustrator), 3D sculpting and animation (Autodesk Maya, Blender, Pixologic ZBrush), and page layout (Adobe InDesign). An artist's professionalism was defined by the depth of their knowledge of these program interfaces, an understanding of layer behavior, masks, Bezier curves, polygon mesh topology, the physics of light when setting up shaders, and the optimization of rendering algorithms (such as Ray Tracing). Artists spent thousands of hours developing fine motor skills with a graphics tablet, attempting to translate classical academic drawing skills into virtual space.

However, the emergence of tools operating on natural language radically changes this state of affairs, shifting the focus from technical execution to intellectual intent. The technical barrier to entry into the field of visual content creation has practically been eliminated. Neural networks have negated the long and laborious stage of "technical routine." An artist no longer needs to manually draw every strand of hair, calculate falling shadows from complex architectural objects, or select gradients to create atmospheric perspective. The mathematical model accomplishes this in a fraction of a second, relying on statistical regularities learned during training on gigantic datasets. The evolution of toolsets has led to a perspective where neural networks are viewed as a "meta-palette" — one where the artist operates with concepts and semantic connections instead of pixels, and prompt engineering has emerged as an art form. In this new reality, language becomes the direct interface for designing the visual world. Prompt engineering evolves from a chaotic selection of tags into a rigorous discipline situated at the intersection of linguistics, semiotics, and art history.

Crafting complex textual prompts is becoming a new form of digital skill, requiring deep knowledge of art history, composition, and color theory to achieve a predictable and artistically significant result. To compel a neural network to produce not just an average "pretty" image resembling a stock photo, but a profound, contextual piece, the prompt engineer must operate with precise categories. They must specify the characteristics of artistic materials (e.g., *"wet watercolor on raw paper with pronounced pigment granulation"*), types of optical lenses and lighting (*"anamorphic 35mm lens, golden hour backlight, cinematic film grain of Kodak Portra 400"*), and make direct stylistic references to specific eras or authors (*"in the style of German Expressionism of the early 20th century, featuring the characteristic jagged lines of Egon Schiele and the palette of Edvard Munch"*).

Consequently, a reconceptualization of the artist's role occurs. The artist ceases to be merely an "executive organ" whose hands hold a brush or stylus. They transform into a director, curator, or art director who sets the conceptual vector, assigns tasks to the algorithm, and subsequently executes strict selection and conceptual editing of the obtained results. Mastery now lies not in the ability to flawlessly draw a line, but in the capacity to think critically, generate unique ideas, and recognize the single iteration among thousands generated that possesses artistic power and aligns with the author's intent.

The problem of authorship, uniqueness, and the "black box" phenomenon

The central issue of this study is the problem of authorship and uniqueness in a world where the production of visual images has reached a hyper-inflationary level. In an environment where an algorithm can generate thousands of high-quality, photorealistic, or artistically sophisticated iterations per minute, the classical value model of a single work is called into question. For centuries, the value of art was based on the concept of scarcity and the uniqueness of a physical or digital object created through significant time and energy



expenditure by a specific individual. Generative AI destroys this scarcity. Visual content becomes instantaneous, costless, and limitless. When any web user can generate an aesthetically pleasing landscape or portrait in seconds, "beauty" as such ceases to be the primary criterion of artistic value.

This leads to a deep ontological crisis: who owns the authorship of a generated work? The current legal framework in many countries (including the US and EU) maintains the position that copyright can belong exclusively to a human (human authorship). The US Copyright Office (USCO) has repeatedly denied registration for works created with the help of neural networks (such as the well-known precedent with Kris Kashtanova's comic "Zarya of the Dawn" or Jason Allen's painting "Théâtre D'opéra Spatial," which won a digital art competition). Legislators argue that a textual prompt is merely a general technical assignment, analogous to a commission given by a patron to an artist, and therefore, the prompter does not control the direct fixation of artistic elements by the algorithm.

Directly related to this is the so-called "Black Box" problem: to what extent can an artist claim a work as their own if the generation process is non-linear and partially beyond human control? The architecture of modern diffusion models operates on the principles of Markov chains and denoising (reverse diffusion propagation). The model takes a base of random Gaussian noise (an completely chaotic set of colored pixels) and, over 20–50 steps, gradually removes this noise, attempting to discover contours of objects that match the semantic vector of the text prompt.

This process is deeply stochastic (probabilistic). Even when using the exact same text prompt and identical configurations, changing the *seed* parameter (the initial random number) will yield completely different visual results from the neural network. The graphical output is non-linear. The creator has no direct control over where a specific shadow will fall, how exactly lines will intertwine, or how color fields will be distributed.

This phenomenon can be compared to several classical avant-garde practices:

- Automatic writing and drawing of the Surrealists (André Breton, Max Ernst), where artists deliberately disengaged rational control, allowing the subconscious or chance to guide their hand.
- Jackson Pollock's drip painting technique, where the final pattern depended on the kinetic force of the throw, the viscosity of the enamel, and gravity, thus containing an immense element of unmanaged randomness.
- Aleatoricism in music (John Cage), where the random selection of elements became the foundation of the composition.

In the context of GenAI, the mathematical randomness of the algorithm becomes the digital analog of a watercolor stain or the unpredictable cracking of varnish. However, the degree of authorial alienation in this case is significantly higher: the artist shares their authorship with a collective intelligence fixed within the weights of the neural network. The work is born at the intersection of human will (intent) and the computational chaos of the machine.

Ethical dilemmas and the crisis of trust in the art market

Despite colossal technological capabilities, the field of generative artificial intelligence has encountered sharp ethical and legal resistance from the professional art community. The primary source of conflict lies in the fact that the data ethics of modern commercial models remain deeply opaque. Most contemporary large multimodal models (LMMs) and diffusion algorithms were trained on datasets (such as LAION-5B) compiled via massive web scraping across the open internet.

These datasets included millions of works by living contemporary artists, photographers, and illustrators, alongside images from platforms like ArtStation, Behance, Pinterest, and DeviantArt — all harvested without the authors' consent, without financial royalty compensation, and without any retention of attribution. Traditional artists found themselves in a situation where their intellectual property became the fuel to create commercial products for tech giants (Stability AI, Midjourney, OpenAI) that now directly compete with the authors themselves in the labor market. This has given rise to the phenomenon of "stylistic exploitation." A user of an AI platform can input a prompt specifying the name of a particular illustrator (e.g., "...in style of Greg Rutkowski" or "...by Loish"), and the system will generate an image that mimics the unique plastic techniques,



brushstrokes, and color schemes of that author. Consequently, living artists lose commissions for creating concept art for games, book covers, and illustrations, as it is cheaper and faster for a client to use a generator that parasitizes a style that took decades to form. This creates a stark conflict between uncompromising technological progress and the fundamental rights of traditional artists to protect their labor.

To overcome this crisis of trust and build a new, legitimate digital art ecosystem, this paper examines the role of NFT (non-fungible token) and blockchain verification technologies in ensuring the authenticity and traceability of digital assets. Blockchain, by its nature, is a decentralized, immutable ledger where every record is cryptographically secured and cannot be forged or retroactively deleted.

Implementing blockchain into the infrastructure of generative art addresses several critical challenges, as presented in Table 1:

Table 1. Mechanisms for Resolving Critical Issues in Digital Art Through Blockchain Technologies.

Critical Art Market Challenge	Resolution Mechanism via Blockchain / NFT	Outcome for the Artist and Industry
Anonymity and stylistic plagiarism	Recording the cryptographic signature of the creator at the moment of token creation (Minting).	Clear verification of the creator's identity; differentiation of the original concept from random generations by copyists.
Loss of control over provenance	Traceability of the entire transaction chain from the genesis block to the current owner.	Establishment of a transparent ownership history for the artistic asset, preventing the forgery of certificates of authenticity.
Lack of compensation in secondary sales	Integration of a royalty mechanism directly into the smart contract code (Smart Contract Royalties).	Automatic deduction of a percentage (e.g., 5–10%) to the author from every subsequent speculative transaction on the secondary market.
Opacity of AI tool utilization	Writing the source prompt code, generation parameters, and the hash of the base model into NFT metadata.	Legitimation of AI art through complete transparency of the creative method; capturing the "author's prompt" as an intellectual contribution.

Through cryptographic verification, an artist utilizing AI can prove their legitimate contribution. For instance, by creating a model variant like LoRA (Low-Rank Adaptation) trained *exclusively on their own, previously hand-drawn images*, the creator uses the neural network to scale their own style. Protecting such a model and verifying its outputs through NFTs returns commercial and symbolic value to the unique authorial gesture. Art historians and collectors receive a tool for clear differentiation: identifying what constitutes spam content ("AI spam") versus mature, conceptual digital art created through the transparent utilization of advanced algorithms.

Conclusion

In summarizing the large-scale transformations occurring within visual culture, it can be confidently argued that neural networks do not lead to the "death of the artist" but, on the contrary, democratize creativity and remove technical barriers to realizing the most complex ideas. For centuries, individuals possessing powerful figurative thinking, unique worldviews, and profound philosophical concepts could remain unheard by society simply due to a lack of access to formal art education, musculoskeletal injuries, or an inability to master the complex motor coordination required for classical painting.



Generative AI dismantles this inequity. It acts as a powerful equalizer of opportunities, allowing every individual to instantly translate their mental images into the visual realm. Technical skills are no longer a filter that determines who has the right to be called an artist. The evolution of the artist's role lies in the transition to becoming a strategic director of the creative process. The artist becomes a thinker, a cultural researcher, an architect of meanings. Their task is not the craft-like reproduction of form, but the formulation of the right questions for existence and the algorithm.

However, the future of digital art depends on achieving a state of ethical symbiosis, which must be reached through prolonged dialogue among AI developers, legislators, and the creative community. Artificial intelligence does not possess its own agency, consciousness, emotional pain, or existential experiences. It is merely a gigantic mathematical mirror reflecting all of human culture captured in the texts and images of the internet space. By itself, the algorithm is dead and static; it comes alive only when human intent is infused into it.

Most importantly and remarkably, human empathy, contextual understanding of the socio-cultural moment, profound personal experiences, spiritual background, and critical thinking are increasingly merging with the computational power of algorithms to create entirely new creative visualizations that were previously far beyond human imagination. This synergetic alliance — where humans remain responsible for the soul, meaning, and ethical guidelines, while the machine handles speed, variance, and technical perfection — opens a new chapter in the history of world culture, making the digital palette of the future truly limitless.

References

- Anantrasirichai, N., & Bull, D. (2021). Artificial Intelligence in the Creative Industries: A Review. *Artificial Intelligence Review*, 54(8), 5891-5941.
https://www.researchgate.net/publication/343228503_Artificial_Intelligence_in_the_Creative_Industries_A_Review#read.
- Benjamin, W. (1935). *The Work of Art in the Age of Mechanical Reproduction*. Schocken Books.
- Boddington, P. (2017). *Towards a Code of Ethics for Artificial Intelligence*. Springer.
- Bridle, J. (2018). *New Dark Age: Technology and the End of the Future*. Verso Books.
- Chebotarova, I., & Khovanets, A. (2026). The Digital Palette of the Future: The Evolution of the Artist's Role in the Era of Neural Networks. *Proceedings of SYNTOPIA Theses*.
- Elgammal, A., Liu, B., Elhoseiny, M., & Mazzone, M. (2017). CAN: Creative Adversarial Networks, Generating Art by Learning About Styles and Deviating from Style Norms. *arXiv preprint, arXiv:1706.07068*.
<https://arxiv.org/abs/1706.07068>.
- Franceschet, M., Colavizza, G., Smith, T. A., Finucane, B., Ostachowski, M. L., Scalet, S., Perkins, J., Morgan, J., & Hernández, S. (2021). Crypto Art: A Decentralized View. *Leonardo*, 54(4), 402–405.
<https://direct.mit.edu/leon/article/54/4/402/97295/Crypto-Art-A-Decentralized-View?searchresult=1>.
- Goodfellow, I., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., Courville, A., & Bengio, Y. (2014). Generative Adversarial Nets. *Advances in Neural Information Processing Systems*, 2672-2680.
- Hertzmann, A. (2018). Can Computers Create Art? *Arts*, 7(2), 18. <https://www.mdpi.com/2076-0752/7/2/18>. Accessed 19.05.2026.
- Manovich, L. (2020). *Cultural Analytics*. The MIT Press.
- Pasquale, F. (2015). *The Black Box Society: The Secret Algorithms That Control Money and Information*. Harvard University Press. <https://www.jstor.org/stable/j.ctt13x0hch>.
- Rombach, R., Blattmann, A., Lorenz, D., Esser, P., & Ommer, B. (2022). High-Resolution Image Synthesis with Latent Diffusion Models. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 10684-10695.

