

Oksana KAPRAN,

orcid.org/0000-0003-0505-1889

*Senior Lecturer at the Department of Fine Arts and Design
Sumy State Pedagogical University named after A.S. Makarenko
(Sumy, Ukraine) kapranok@ukr.net*

TRANSFORMATION OF THE CREATIVE PROCESS OF FORMING A COLOR GRAPHIC IMAGE IN VISUAL ART UNDER THE INFLUENCE OF ARTIFICIAL INTELLIGENCE

The present article explores the impact of artificial intelligence on the transformation of the creative process involved in the formation of color graphic images in modern visual arts. Historical approaches to creating a graphic image as a synthesis of form, composition, and color are considered and analyzed, where the coloristic component part of the image is determined as a key expressive means that forms the semantic structure of the perception of a work of art.

The main aim of the article is to identify changes in artists' roles within the context of algorithmic image generation and to describe aspects of the transformation of the creative process of graphic image formation under the influence of generative artificial intelligence algorithms. The article raises questions regarding experimental research into the structure of the author's creative exploration of the harmonious combination of color elements in a graphic image, as well as an analysis of modern methods for studying the processes of artistic image formation in the context of the interaction of traditional artistic practices and digital technologies.

The key trends in the integration of digital technologies into contemporary artistic practice, a process accompanied by a shift in traditional methods of creative exploration, the transformation of existing approaches, and the emergence of new opportunities and challenges are analyzed in the present article. It demonstrates that the interaction between humans and algorithmic systems opens up new ways for the artist's creative self-expression. Special attention is focused on the actualization of the combination of the capabilities of artificial intelligence and human creative potential in the process of finding creative solutions, in which the modern artist acts as a curator and editor of co-creation with the algorithm.

In conclusion, it is noted that the further development of the artist's collaboration with artificial intelligence should focus on researching and developing methodologies for the joint creation of art by a human and an algorithm, establishing ethical principles for the use of artificial intelligence, and integrating traditional theories of composition and color theory with digital technologies, while the artist remains the key creator of the artistic image.

Key words: *artificial intelligence, creative process, color graphic image, visual arts, coloristic, digital technologies.*

Оксана КАПРАН,

orcid.org/0000-0003-0505-1889

*старший викладач кафедри образотворчого мистецтва та дизайну
Сумського державного педагогічного університету імені А.С. Макаренка
(Суми, Україна) kapranok@ukr.net*

ТРАНСФОРМАЦІЯ ТВОРЧОГО ПРОЦЕСУ ФОРМУВАННЯ КОЛЬОРОВОГО ГРАФІЧНОГО ОБРАЗУ В ОБРАЗОТВОРЧОМУ МИСТЕЦТВІ ПІД ВПЛИВОМ ШТУЧНОГО ІНТЕЛЕКТУ

У статті досліджено вплив штучного інтелекту на трансформацію творчого процесу формування кольорового графічного образу в сучасному образотворчому мистецтві. Розглянуто та проаналізовано історичні підходи до створення графічного образу як синтезу форми, композиції та кольору, де колористична складова зображення визначена ключовим виразним засобом, що формує смислову структуру сприйняття художнього твору.

Основною метою статті є з'ясування зміни ролі художника в контексті алгоритмічної генерації зображень та висвітлення аспектів трансформації творчого процесу формування графічного образу під впливом генеративних алгоритмів штучного інтелекту. Порушуються питання експериментального дослідження структури авторського творчого пошуку гармонійного поєднання кольорових елементів графічного зображення та аналізу сучасної методики дослідження процесів формування художнього образу в контексті взаємодії традиційних мистецьких практик і цифрових технологій.

У роботі проаналізовано ключові напрями впровадження цифрових технологій у сучасну мистецьку практи-

ку, яка супроводжується зміною традиційних шляхів творчого пошуку, трансформацією існуючих підходів і появою нових можливостей та викликів. З'ясовано, що взаємодія людини і алгоритмічних систем відкриває нові шляхи для творчого самовираження митця. Особливу увагу зосереджено на актуалізації поєднання можливостей штучного інтелекту та творчого потенціалу людини в процесі пошуку креативних рішень, в якому сучасний художник виступає куратором і редактором співтворчості з алгоритмом.

У підсумку відзначено, що подальший розвиток співпраці митця зі штучним інтелектом має бути спрямований на дослідження та розробку методології спільної творчості людини й алгоритму, встановлення етичних принципів використання ШІ, а також на інтеграцію традиційних теорій композиції та колористики з цифровими технологіями, де ключова роль у формуванні художнього образу залишається за митцем.

Ключові слова: штучний інтелект, творчий процес, кольоровий графічний образ, образотворче мистецтво, колористика, цифрові технології.

Statement of the problem. How creative is the process of creating a color graphic image in the visual arts? Are the modern methods allowing experimental research of the author's creative process structure in the harmonious combination of elements in a color graphic image? In the context of the rapid spread of digital technologies in various spheres of human activity, these questions require research and answers. The usage of artificial intelligence in the creation of visual images has become a major trend that is transforming traditional conceptions of the artistic process. A new methodological and theoretical task of the present time is to recognize and combine the artist's intuitive approach with the capabilities of an algorithmic artificial intelligence approach.

Traditionally, the process of creating a color graphic image has included the following stages: initial concept idea, concept formation, preliminary sketches of the compositional arrangement of elements, selection of a color palette, and technical execution. The adoption of artificial intelligence is changing this structure, transforming it into an interactive process of co-creation between humans and algorithms. The influence of artificial intelligence is most visible in the processes of creative exploration, which are driven by the artist's emotional and mental state and have traditionally defined artistic creation. The question of preserving a work's artistic value becomes relevant in the context of an artist's interaction with algorithmic systems that offer numerous variations in style, composition, and color schemes, posing new challenges for understanding authorship in art.

Research analysis. One of the key trends in modern visual art is the integration of artificial intelligence into artistic practice and its influence on the creative process of color graphic images producing. This provides new opportunities for the artist to find options for the composition and color solutions of the future work, allowing them to experiment with styles and stylizations in the process of finding the best creative solution. The analysis of the influence of artificial intelligence technologies on various areas of human activity for a long time was at the stage of adaptation

to artistic practice. Publications on this topic, starting in 2005, when the number of works on artificial intelligence in art was insignificant, have been steadily increasing in recent years. The possibility of experimenting with color combinations in the context of automating routine search actions is considered one of the key advantages of using artificial intelligence in the process of creating a work of art. Dr. Olena Remizova, a Doctor of Architecture, writes about and studies interactive digital color graphics in her articles (Remizova, 2015).

Vsevolod Mikhailenko, Honored Scientist of Ukraine, presents and describes in his works the results of research on the integration of traditional theories of composition and color theory with digital technologies. (Mikhailenko, 2017).

Galina Bryukhanova, Candidate of Pedagogical Sciences and art and education teacher, analyzes and discusses the training of art and design professionals in the context of an increasingly digital society in a textbook for university students (Bryukhanova, 2018).

Articles by Ukrainian scientists Volodymyr Umanets and Svitlana Kizim provide a thorough analysis of the theoretical and practical aspects of implementing artificial intelligence technologies in the training of specialists in the fields of culture and art (Umanets, Kizim, 2023).

The aim of the present article is to highlight the transformation of the creative process involved in forming a colored graphic image in the visual arts under the influence of generative artificial intelligence algorithms, and to identify the new opportunities for artistic self-expression that are opened up by the interaction between humans and algorithmic systems in modern artistic practice.

Presentation of the main material. Graphic art is one of the oldest forms of visual art, historically based on line, light and shadow, and composition. The nature of graphic art lies in the generalization of form and the conveyance of the essential through minimal means. The history of graphic art can be traced from cave paintings to modern digital forms. Throughout ages, it had ritual, cognitive, and communica-

tive functions. The Renaissance period gave graphic art the status of an independent art form thanks to advances in printing techniques. In the 20th century, there was an active search for new forms of expression and artistic means. With the advent of photography, film, and computers, the possibilities for graphic artists expanded significantly in the realm of color. The appearance of computer graphics in the 1980s and 1990s marked the beginning of a "new era of visuality" which made it possible to work not only with physical materials but with virtual, colorful image forms (Fedoruk, 2007).

A color graphic image is a combination of the graphic's clear structure (lines, shapes) with the emotional expressiveness of color. It is often used in illustrations, posters, and design to create simple but expressive images, where color highlights the form while maintaining the dominance of the outline and the plane. The visual image is the key means of artistic expression. In classical art, the creation of an image is based on the laws of composition (symmetry, rhythm, and proportion), coloristic principles of harmony such as contrast and nuance, the psychological influence of color, and the artist's artistic intuition and experience. A graphic image has traditionally been considered as a synthesis of form, composition, and color (Remizova, 2015: 78). Classic theoreticians and modern Ukrainian authors highlight the importance of such a synthesis, in which color plays a unifying role in achieving the integrity and emotional impact of the depicted image. Color in the graphic image is a key expressive element that shapes the mood and the semantic structure of perception. In the theory of visual arts, color is defined as the language through which an artist expresses emotions and symbolism.

The process of creating a color graphic image in the visual arts is highly creative and multifaceted, as it combines an individual artistic vision, an emotional perception of the world, and professional knowledge of the principles of composition and color theory. The creation of a color graphic image involves a combination of creative intuition and professional experience (Umanets and others, 2023: 80a)

The usage of color is governed by the physical laws of visual perception, psychological effects, and the compositional structure of the artwork. The color of a work of art influences the viewer on both psychological and cultural levels. Some color combinations can create the desired mood and "influence" the viewer's perception of the painting. The artistic image of a work of art is formed under the influence of its color composition. The nature of a painting's color scheme depends on the artist's vision: it can be muted or contrasting, warm or cool (Kapran, 2023: 17).

Modern scientific methods make it possible to experimentally study the structure of the artist's creative process, particularly the process of harmoniously combining the elements of a color graphic image. Art history and design studies use various methods to analyze both the objective and subjective aspects of an artist's creative work. These methods include:

- Formal-compositional analysis, which examines the interaction of color and form, allows us to identify patterns in the organization of a color composition and the principles governing the harmonious combination of its elements;
- Psychological analysis examines the artist's thought processes, intuition, associative connections, and emotional factors that influence the choice of color combinations and the formation of the artistic image;
- The comparative analysis method reveals the distinctive features of various works and the individual traits of artists' creative styles;
- Digital methods allow for the analysis of color spectral characteristics and compositional structures.

During the evolution of the creative search for graphic images from traditional graphic techniques to digital ones, the principles of constructing a color graphic image remain relevant, but their implementation is partially entrusted to algorithms. In modern processes that involve artificial intelligence, algorithms are capable of proposing new color combinations, taking into account contrast, temperature, and the psychological effect of each shade, as well as the compositional structure of the image (Nezveshchuk-Kohut, 2021: 260). Artificial intelligence technologies are applied in graphic art through neural networks, which are computational models inspired by the structure and functioning of the human mind. They are used to process information, identify trends, and make decisions based on the available data. Stylization and transformation algorithms are capable of simplify or stylize, metaphorize or abstract the form of an image depending on the given task; they can even generate a retro version of an image, automatically select compositions and color schemes, and offer various color options. These technologies allow artists to avoid tedious technical trial-and-error processes and generate a wide range of image variations in a short time, which greatly accelerates the creative process of finding the best final version of a graphic image. As a result, the creative process is transforming: artificial intelligence is shifting the role of the artist from that of an executor to that of a curator and editor, from technical execution to conceptual analysis, and from individual work to co-creation with an algorithm. The process becomes interactive: the art-

ist formulates ideas, sets parameters, and refines the results, focusing on the idea and conception of the artwork, while the algorithm offers options (Umanets and others, 2023: 80b). In the creative process, artificial intelligence serves not only as a tool but also as a co-creator capable of proposing unexpected solutions. This raises questions about the limits of machine autonomy, that is, the degree of independence within which a system can make decisions and operate while performing tasks without direct human involvement in the process. At the same time, these abilities are limited by the rules and controls that humans set. Some researchers believe that artificial intelligence is capable of making independent aesthetic choices, as evidenced by the visual images it generates; others view it as a continuation of the human mind.

The integration of artificial intelligence into artistic practice is accompanied by a transformation of existing approaches and the appearance of new opportunities and challenges. An artist working in tandem with artificial intelligence can expect to accelerate the image-generation process, expand the scope for experimentation with color and compositional choices, and increase productivity and accessibility to more complex techniques. However, it is important to bear in mind that there is also a risk of standardization of the images and a reducing the role of handmade craftsmanship. Complicated ethical questions regarding authorship and a sense of psychological dependence on algorithmic guidance may arise. The future development of the artist's collaboration with artificial intelligence should be focused on researching and developing methods for human-algorithm co-creation, establishing ethical standards for the use

of artificial intelligence, and integrating traditional theories of composition and color theory with digital technologies, while ensuring that the artist retains a key role in shaping the artistic image.

Conclusions. The conducted research allowed us to identify the main theoretical and practical aspects of implementing of artificial intellect technologies in the process of an artist's creative search and the influence on the development of graphic art as one of the directions of modern fine art. The authors have identified that graphics have served as a fundamental form of artistic expression since ancient times. It is based on color contrast, rhythm, and composition, reflecting not only the external form of the objects, but also the artist's inner feelings. Throughout history, graphic design has continually developed, adapting to technical and cultural changes. The shift from traditional materials to digital technologies was a natural step in this evolution, as the computer opened up new possibilities for artists. Special attention was given to highlighting the combination of artificial intellect capabilities and human creativity in the process of color graphics designing. The application of artificial intelligence algorithms allows artists to avoid routine actions, helps generate original creative ideas, facilitates the creation and visualization of concepts, and accelerates the process of sketching and finding a harmonious color scheme for a work. Artificial intelligence is fundamentally transforming the process of color graphics creation, turning it into a co-creation between man and algorithm. This opens up a new possibility for experimentation, but requires a rethinking of the artist's role and methods of art education. Saving the artist's individuality and critical thinking is a key task in the digital age.

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Дата першого надходження статті до видання: 06.03.2026

Дата прийняття статті до друку після рецензування: 25.03.2026

Дата публікації (оприлюднення) статті: 19.05.2026

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