ARTIFICIAL INTELLIGENCE AND CONTEMPORARY VISUAL ART: THE TRANSFORMATION OF THE CREATIVE PROCESS, ARTISTIC THINKING, AND AESTHETIC VALUES

Rakhmonkulov Khamrokul Bobokulovich
Associate Professor, Termez State University
raxmonqulovxamroqul@gmail.com
doi:https://doi.org/10.5281/zenodo.24522929

Abstract: This article examines the growing influence of artificial intelligence (AI) on contemporary visual art and analyzes the transformation of artistic creativity, visual thinking, and aesthetic values in the context of digital technologies. Particular attention is paid to the use of generative algorithms in the creation of artistic images, the interaction between human creativity and computational systems, and the emergence of new approaches to artistic composition and visual expression. The article explores the creative practices of artists working with artificial intelligence, including Refik Anadol and Vera Molnar, and considers how algorithmic processes influence the development of contemporary artistic language. It also addresses important theoretical and ethical questions concerning artistic authorship, originality, creative responsibility, and the role of human intention in AI-generated works. The article argues that artificial intelligence should not be regarded merely as a technical instrument but as a new technological environment that is transforming the methods and conceptual foundations of contemporary artistic practice. Particular consideration is also given to the opportunities and challenges associated with integrating artificial intelligence into the development of visual art in Uzbekistan.

Keywords: artificial intelligence, contemporary visual art, digital art, generative art, artistic creativity, algorithmic composition, AI-generated images, artistic authorship, originality, aesthetic values, digital technologies, human-machine collaboration.

Introduction

The rapid development of information technologies and artificial intelligence has become one of the defining characteristics of contemporary society. These processes are influencing not only science, education, economics, and communication but also the cultural and artistic spheres. In particular, the emergence of artificial intelligence-based systems has created new opportunities for producing, interpreting, and presenting visual images.

For centuries, artistic creation was primarily associated with human imagination, practical skills, emotional experience, and individual artistic perception. The artist observed the surrounding world, interpreted it through personal experience, and transformed these impressions into an artistic image. However, the development of digital technologies has introduced new methods of visual production in which computational systems can participate in the creation of images, patterns, compositions, and complex visual environments.

Artificial intelligence has brought about a new stage in this process. Modern generative systems can analyze large volumes of visual information, identify patterns, and produce new images based on textual instructions or other forms of input. This development has expanded the technical possibilities of artistic

creation while raising important questions about the nature of creativity, the role of the artist, and the meaning of artistic originality.

The use of artificial intelligence in visual art should not be considered solely a technical innovation. It also represents a significant transformation in artistic thinking and creative methodology. The relationship between human imagination and machine-generated results has become an important subject of contemporary art theory and aesthetics.

The purpose of this article is to examine the influence of artificial intelligence on contemporary visual art, analyze the transformation of the creative process, and explore the theoretical and aesthetic questions arising from the interaction between human creativity and generative technologies.

Artificial intelligence in contemporary visual art: the concept of generative creativity

Artificial intelligence refers to computer-based systems designed to perform tasks that generally require certain forms of human cognitive activity, including learning, pattern recognition, information processing, and decision-making. In the field of visual art, AI technologies are increasingly used to analyze images, generate visual compositions, modify existing artworks, and explore new forms of artistic expression.

One of the most important applications of artificial intelligence in art is generative image creation. Generative systems use mathematical models and computational procedures to produce images based on previously learned patterns and input instructions. Depending on the system, the generated results may include realistic images, abstract compositions, architectural concepts, portraits, landscapes, and experimental visual forms.

The development of generative artificial intelligence has changed the relationship between the artist and the process of image creation. In traditional painting, the artist generally constructs an image through direct work with materials, drawing, colour, texture, and composition. In AI-assisted creation, the artist may formulate a concept, provide instructions, select visual references, adjust parameters, and evaluate the generated results.

This process does not eliminate the artist's role. Instead, it changes the nature of artistic activity. The artist increasingly becomes a conceptual designer, visual researcher, and evaluator of generated images. The ability to formulate a meaningful artistic concept and distinguish between technically successful and aesthetically significant results remains essential.

Generative artificial intelligence therefore creates a new relationship between artistic intention and computational production. Its significance lies not only in the speed of image generation but also in the possibility of exploring visual combinations and structures that may be difficult to achieve through conventional methods.

The interaction between human creativity and artificial intelligence

The relationship between human creativity and artificial intelligence is one of the central issues in contemporary discussions of digital art. Although AI systems can generate images independently after receiving instructions, their artistic significance is closely connected with human decisions, intentions, and interpretations.

The creative process involving artificial intelligence generally includes several interconnected stages: the formulation of an artistic concept, the preparation of instructions, the generation of visual alternatives, the evaluation of results, and the selection or further development of the final image.

At the initial stage, the artist determines the subject, theme, visual direction, and intended artistic meaning. The instructions provided to an AI system may include descriptions of composition, colour, style, lighting, perspective, and visual atmosphere. The system then generates possible interpretations based on its computational model.

However, the first generated result is not necessarily the final artistic outcome. The artist may modify the instructions, compare alternative images, select particular visual elements, and combine the generated material with traditional artistic techniques.

This interaction demonstrates that AI-assisted artistic creation is not simply a process of automatic image production. It may involve a complex relationship between human imagination, technological capabilities, and aesthetic judgment.

From the perspective of artistic theory, the role of the artist remains particularly important in determining the conceptual direction and meaning of the work. A computer system can generate visual forms, but the interpretation of their cultural, emotional, and symbolic significance requires human understanding.

Therefore, the most productive approach to AI-assisted art is not to replace human creativity with computational production but to establish a meaningful relationship between technological tools and artistic thinking.

Refik anadol's creative practice: data, artificial intelligence, and visual aesthetics

One of the prominent contemporary artists working with artificial intelligence and data-based visual systems is Refik Anadol. His artistic practice demonstrates how large volumes of digital information can be transformed into complex visual environments through machine learning and generative technologies. Anadol's projects frequently combine data analysis, computer-generated imagery, architectural space, light, and sound. In his works, information is not simply presented as numerical or textual content. Instead, it becomes a source for creating visual structures, dynamic forms, and immersive artistic experiences.

A notable example is his project Unsupervised, presented at the Museum of Modern Art (MoMA) in New York. The work was developed through machine-learning processes using data associated with the museum's collection. The system analyzed visual information and generated dynamic compositions that reinterpreted the artistic material in an abstract and constantly changing form.

The significance of this project lies in the transformation of museum data into an independent visual experience. Artworks and historical collections become part of a computational process through which new forms of visual expression emerge.

Anadol's artistic approach also raises important questions about the relationship between cultural heritage and digital technologies. By using artificial intelligence to process large visual collections, he demonstrates how historical artistic materials can become resources for contemporary creative interpretation.

From an aesthetic perspective, his works challenge traditional expectations of a stable artistic image. The visual composition changes continuously, and its appearance may depend on data processing and computational procedures. Consequently, the artwork is experienced as a dynamic process rather than a fixed object.

Anadol's practice demonstrates that artificial intelligence can function as a tool for exploring new forms of artistic expression, particularly when it is combined with a clear conceptual framework and a thoughtful approach to visual organization.

Vera molnar and the historical foundations of generative art

The development of contemporary AI-based art can be better understood by examining the earlier history of computer-generated and algorithmic art. In this context, the work of Vera Molnar is particularly important.

Vera Molnar was one of the pioneering artists who explored the artistic possibilities of computers and mathematical systems. Her experiments, which began before the widespread availability of modern digital technologies, demonstrated how programmed instructions and controlled variations could become foundations for visual composition.

Molnar's artistic practice focused on geometric structures, repetition, irregularity, and the relationship between order and chance. She developed visual systems in which small changes to predetermined rules could produce different compositional outcomes.

Her work Interruptions is an important example of this approach. It demonstrates how geometric patterns can be modified through controlled deviations, producing visual tension between regularity and irregularity.

Although Molnar's work predates contemporary generative AI, her artistic principles remain relevant to current discussions of computational creativity. Both algorithmic art and AI-generated art involve the interaction between human-defined concepts and computer-based processes.

However, there is an important distinction between the two. In early algorithmic art, the artist generally defined a relatively explicit set of rules that determined the structure of the visual result. Contemporary generative AI systems, by contrast, use complex models trained on large datasets and may produce results that are less directly predictable.

Molnar's contribution is therefore significant not only as a historical example of computer art but also as a foundation for understanding the relationship between artistic intention, mathematical systems, and visual experimentation.

The influence of artificial intelligence on painting and composition

Artificial intelligence is influencing traditional forms of visual art, including painting, drawing, graphic design, and illustration. Its impact can be observed in the development of new methods for creating visual concepts, experimenting with colour, constructing compositions, and interpreting artistic styles.

In painting, AI systems can generate preliminary visual studies, suggest alternative arrangements of objects, and produce different interpretations of a particular subject. These possibilities may be useful during the preparatory stages of artistic work, when the artist is exploring compositional solutions or searching for a particular visual direction.

Artificial intelligence can also support experimentation with colour relationships. By generating multiple variations of an image, digital systems allow artists to compare different tonal structures, colour harmonies, and contrasts.

However, the use of AI-generated images does not remove the need for a thorough understanding of traditional artistic principles. Knowledge of drawing, anatomy, perspective, colour theory, composition, and material techniques remains essential for evaluating and developing visual ideas.

From the perspective of composition, AI-generated imagery introduces new opportunities for exploring visual balance, rhythm, symmetry, asymmetry, contrast, and spatial organization. Artists can use generated images as references or as starting points for further artistic development.

Nevertheless, the technical complexity of an AI-generated image should not automatically be interpreted as evidence of high artistic quality. A visually impressive result may lack a meaningful concept, compositional coherence, or cultural depth.

The artistic value of a work therefore depends not only on the capabilities of the technology but also on the artist's ability to select, interpret, and transform visual material into a coherent artistic statement.

Artistic authorship, originality, and ethical questions

The development of artificial intelligence has intensified discussions about artistic authorship and originality. One of the central questions is whether an image generated by an AI system should be regarded as an independent artwork and, if so, who should be considered its creator.

In traditional artistic practice, authorship is generally associated with the individual who develops the concept and creates the artwork through their own creative decisions and practical skills. In AI-assisted art, however, the process may involve several elements: the artist's instructions, the computational model, training datasets, software developers, and the selection or modification of generated results.

This complex relationship makes the question of authorship more difficult to define. The person who formulates the instructions may make an important creative contribution, but the system also performs computational operations that influence the final visual result.

Originality is another important issue. AI systems are generally trained using existing information, including images and other visual materials. Consequently, discussions arise concerning the relationship between generated images and the works or styles represented in the training data.

These questions are not limited to artistic theory. They also involve copyright, ownership, transparency, and the protection of artists' creative rights. Legal approaches to AI-generated works differ across jurisdictions, and the relationship between human creative contribution and machine-generated material remains an evolving area of discussion.

Ethical considerations also include the responsible use of visual data, the possibility of misleading audiences, and the need to distinguish between human-created and AI-generated content when such information is relevant.

A balanced approach requires recognizing both the creative opportunities and the limitations of artificial intelligence. Technology should support artistic development without undermining the rights, professional contribution, and cultural significance of human creators.

Artificial intelligence and the transformation of aesthetic thinking

The introduction of artificial intelligence into visual art has raised important questions about the nature of aesthetic experience and artistic perception. Traditionally, aesthetic judgment has been associated with human sensory experience, emotional response, cultural knowledge, and intellectual interpretation.

AI systems can analyze visual patterns and generate images that correspond to particular stylistic or compositional characteristics. However, the ability to process visual information should not be confused with human aesthetic experience.

Aesthetic perception involves more than the recognition of shapes, colours, and patterns. It also includes emotional associations, cultural meanings, historical context, personal experience, and the interpretation of artistic intention.

For this reason, the role of human judgment remains essential in evaluating AI-generated artworks. The artist or viewer determines whether an image communicates a meaningful idea, creates an expressive effect, or contributes to a particular artistic discourse.

Artificial intelligence may also influence the development of new aesthetic preferences. The increasing availability of highly detailed and visually complex images can affect contemporary expectations regarding visual quality, realism, and artistic experimentation.

At the same time, the widespread use of similar generative systems may contribute to visual repetition or stylistic homogenization. If artists rely excessively on standard computational models, the diversity of artistic expression may become limited.

Therefore, the development of AI-based art should be accompanied by critical artistic thinking, cultural awareness, and an understanding of the distinctive qualities of individual creative practice.

The prospects for artificial intelligence in the visual arts of uzbekistan

The integration of artificial intelligence into the visual arts of Uzbekistan offers new opportunities for artistic education, creative research, and the contemporary interpretation of national cultural heritage. Uzbekistan possesses a rich artistic tradition, including miniature painting, monumental painting, architectural decoration, ceramics, traditional ornamentation, and applied arts. These traditions provide valuable visual and conceptual resources for contemporary digital creativity.

Artificial intelligence can be used as an auxiliary tool for exploring compositional ideas, generating visual references, studying historical ornamentation, and developing digital interpretations of traditional artistic forms. For example, visual elements associated with the miniature traditions of Kamoliddin Behzod, the archaeological murals of Afrosiyob, or the architectural heritage of ancient Termez may serve as subjects for digital research and artistic experimentation.

However, the use of AI technologies in interpreting national artistic heritage requires a responsible approach. Historical images and traditional artistic forms should not be treated merely as decorative material. Their cultural, historical, and symbolic meanings must be taken into account.

In art education, artificial intelligence may support the development of preliminary sketches, visual research, compositional studies, and digital illustration. It can also provide opportunities for students to compare different visual solutions and develop critical approaches to contemporary image production.

Nevertheless, AI-based tools should not replace the fundamental disciplines of artistic education. Drawing, painting, composition, colour theory, perspective, and the study of art history remain essential components of professional artistic development.

The most effective approach is to integrate technological knowledge with traditional artistic training. Such an approach would enable future artists and designers to use digital technologies creatively while maintaining a strong understanding of national artistic heritage and professional standards.

In the long term, artificial intelligence may contribute to the development of digital exhibitions, interactive presentations of historical monuments, experimental animation, generative graphic compositions, and new forms of contemporary visual art in Uzbekistan.

Conclusion

Artificial intelligence has become an important factor in the transformation of contemporary visual art. Its development has introduced new methods of image production, expanded the possibilities of artistic experimentation, and influenced traditional approaches to composition, colour, form, and visual expression.

The interaction between human creativity and computational systems has created new forms of artistic practice. Artists can use artificial intelligence to explore visual alternatives, develop conceptual ideas, and experiment with complex digital structures. At the same time, the creative process continues to depend on human intention, aesthetic judgment, cultural knowledge, and the ability to interpret visual material.

The artistic practices of Refik Anadol and the historical experiments of Vera Molnar demonstrate different stages in the relationship between art and computational technologies. Their work illustrates how mathematical systems, digital data, and generative processes can become resources for artistic exploration.

However, the development of AI-generated art also raises significant questions concerning authorship, originality, copyright, transparency, and the ethical use of visual information. These issues require careful consideration in both artistic practice and academic research.

It is important to emphasize that artificial intelligence should not be regarded as a replacement for the artist. Rather, it should be understood as a technological instrument and creative environment that can expand the possibilities of human artistic expression.

For Uzbekistan, the integration of artificial intelligence with national artistic traditions offers considerable potential. By combining digital innovation with the historical and cultural foundations of local visual art, artists and researchers can develop new forms of creative expression while preserving the distinctive characteristics of national artistic identity.

In conclusion, the future of artificial intelligence in visual art will depend not only on technological progress but also on the depth of artistic thinking, the responsibility of creators, and the ability to maintain a meaningful relationship between innovation, human creativity, and aesthetic values.

REFERENCES

1. Manovich, L. The Language of New Media. Cambridge, MA: MIT Press, 2001.
2. Manovich, L., and Arielli, E. Artificial Aesthetics: Generative AI, Art and Visual Media. 2024.
3. Paul, C. Digital Art. 4th ed. London: Thames & Hudson, 2023.
4. Grau, O. Virtual Art: From Illusion to Immersion. Cambridge, MA: MIT Press, 2003.
5. Museum of Modern Art (MoMA). Refik Anadol: Unsupervised. New York: MoMA, 2022–2023.
6. National Gallery of Art. Materials on Vera Molnar and her work Interruptions.
7. Victoria and Albert Museum. Materials on Vera Molnar and the history of generative art.
8. Gaidartzi, A., and Stamatoudi, I. "Authorship and Ownership Issues Raised by AI-Generated Works: A Comparative Analysis." Laws, 2025, 14(4), 57.

9. Khosrowi, H. et al. “Engaging the Many-Hands Problem of Generative-AI Outputs: A Framework for Attributing Credit.” AI and Ethics, 2025, vol. 5, pp. 4495–4513.
10. UNESCO. Reports and publications on artificial intelligence, culture, and the creative industries, 2025.