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**ARTIFICIAL INTELLIGENCE IN IDEA GENERATION
AND OVERCOMING CREATIVE BLOCKS**

Abstract. The article examines how modern technologies and AI impact the generation of ideas, overcome creative blocks, and foster creativity in art and design. Today, when technologies are rapidly changing and influencing society, neural networks and generative systems are becoming powerful new tools for artists, educators, and designers, helping them to search for new ideas. The paper also provides examples of AI applications in graphic design, multimedia, web design, and education. It shows how artificial intelligence helps to come up with new visual solutions, create compositions, search for stylistic solutions, and overcome barriers to creativity. It has been determined that the use of AI inspires experimentation and trying new things within a creative framework, develops visual thinking, and provides an opportunity to combine human imagination with the capabilities of technology. Ethical issues are considered separately, namely the use of artificial intelligence, specifically the issues of authorship, preservation of individual style, the role of talent, and cultural context. Although artificial intelligence can automate many processes, it does not replace humans, but instead becomes their partner in creativity and a source of inspiration. Therefore, effective interaction between humans and artificial intelligence is possible provided that technology is harmoniously and ethically combined with human experience, emotionality, and creative thinking. Such cooperation creates a new system of creativity in which technology does not replace but helps to develop human imagination.

Keywords: artificial intelligence, creativity, idea generation, creative blocks, design, multimedia.

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**ІШТУЧНИЙ ІНТЕЛЕКТ У ГЕНЕРАЦІЇ ІДЕЙ
ТА ПОДОЛАННІ ТВОРЧИХ БЛОКІВ**

Анотація. У статті досліджується як сучасні технології та ІШ впливають на створення ідей, подолання творчих блоків і розвиток креативності у мистецтві та дизайні. Сьогодні коли технології швидко змінюють та впливають на суспільство, нейронні мережі та генеративні системи стають новими потужними інструментами для митців, педагогів і дизайнерів, допомагаючи шукати нові ідеї. У роботі також наведено приклади застосування ІШ в графічному дизайні, мультимедіа, веб дизайні та освіті. Показано, як саме штучний інтелект допомагає придумувати нові візуальні рішення, створювати композиції, пошуку стилістичних рішень і подоланню бар'єрів у творчості. Визначено, що використання ІШ надихає експериментувати та пробувати щось нове у творчих рамках, розвиває візуальне мислення та дає шанс поєднати людську уяву та можливості технологій. Окремо розглядаються етичні питання, а саме використання штучного інтелекту, а саме питанням авторства, збереження індивідуального стилю, ролі таланту та культурного контексту. Хоч штучний інтелект може автоматизувати багато процесів, він не замінює людину, а навпаки стає її партнером у творчості та джерелом натхнення. Отже, ефективна взаємодія людини й штучного інтелекту можлива за умови гармонійного та етичного поєднання технологій з людським досвідом, емоційністю й креативним мисленням. Така співпраця створює нову систему творчості, у якій технології не замінюють, а допомагають розвивати людську уяву.

Ключові слова: штучний інтелект, креативність, генерація ідей, творчі блоки, дизайн, мультимедіа, етика, інновації.

Introduction. In the contemporary world, technological advancements profoundly impact almost every sphere of human activity, with the creative industries experiencing one of the most significant transformations. Artificial Intelligence (AI) has transcended its initial role as a mere tool for automating routine tasks and has emerged as a dynamic source of inspiration and a collaborative partner in the creative process. Modern AI systems, particularly generative models and neural networks, are capable of synthesizing novel concepts, analyzing complex visual datasets, and offering unexpected aesthetic solutions, thereby helping artists to overcome creative blocks and explore uncharted artistic territories. This integration is fundamentally reshaping not only the practical workflow of creators but also the very nature of inspiration, fostering a new paradigm of human-computer co-creation.

The application of artificial intelligence in art and design has been a subject of extensive research by numerous Ukrainian and foreign scholars, including V. Volynets, S. Gerenko, A. Kasich, Ya. Yakovenko, Yu. Klyus, N. Chernyshenko, J. Liang, M. Oustamanolakis, C. Peng, V. Sattele, J. Ortiz and others. Their collective work demonstrates that neural networks can significantly augment the capabilities of artists and designers. This augmentation manifests in several key areas: accelerating the iterative process of creating and refining compositions, generating innovative color palettes and harmonious schemes, proposing diverse stylistic directions, and providing a vast array of conceptual starting points that can ignite the creative process [1].

In specialized fields such as graphic design, multimedia production, and illustration, AI is increasingly becoming an invaluable creative partner. It assists in the generation of original visual concepts, promotes the discovery of non-standard compositional structures that may not be immediately intuitive to the human mind, and helps diversify the traditional creative arsenal with algorithmically-driven techniques. For instance, AI tools can deconstruct and remix artistic styles, create complex patterns, or generate multiple layout variants in seconds, freeing the artist to focus on higher-level conceptual and curatorial decisions.

However, the effective integration of AI into artistic practice is not without its challenges. It requires a nuanced approach that carefully considers the individual characteristics of artists, their unique, often idiosyncratic styles, and deeply personal aesthetic preferences. The core principle guiding this collaboration is that artificial intelligence is not intended to replace human creativity but to augment it, serving as a powerful assistant that stimulates the implementation of even the most daring creative ideas. To fully realize this synergistic potential, a critical hurdle must be addressed: bridging the existing gap between the often standardized, data-driven output of AI technologies and the vast, subjective, and emotionally charged spectrum of human creative needs. Resolving this discrepancy and developing more adaptive, intuitive, and artist-centric AI systems presents a compelling direction for further interdisciplinary research at the intersection of computer science, aesthetics, and artistic pedagogy.

Setting objectives. The article aims to study the multifaceted interaction between humans and artificial intelligence algorithms in the arts, with a focus on the psychological, professional, and aesthetic characteristics of users. Due to the significant diversity of experience, training levels, and individual motivations among professionals in the field of design and art, conventional approaches to the use of AI are insufficient. Therefore, this study seeks to identify and systematize various individualized ways of using artificial intelligence. Such approaches will allow the power of modern technologies to be organically combined with the flexibility and depth of human imagination, providing synergy that opens new horizons for creativity and preserves the uniqueness of the author's idea.

Research Results. Modern creative processes are increasingly integrating digital technologies, including artificial intelligence, and this undoubtedly opens up new opportunities

for artists. As V. Volynets notes, the interaction between humans and algorithms in art is twofold: it not only reduces routine workloads but also, significantly, stimulates the search for non-standard solutions and allows for the exploration of new horizons of creative reflection [1]. Artists, using generative systems, can now quickly develop concepts that previously required a significant amount of time, while experimenting with form, color, and composition. This opens up real opportunities for combining innovative and traditional approaches in art. S. Herenko emphasizes that AI allows for combining different styles and forms, creating unexpected compositions and opening new avenues for experimentation [2]. It is this combination that helps overcome creative barriers that often arise due to fear of failure or routine work. Generative algorithms provide multiple options for a single compositional idea, enabling the artist to evaluate alternative approaches and select those that appear most interesting and original. Here, the freedom of creativity is felt – as if the artist has gained another "intellectual tool" in their arsenal.

The aspect of co-authorship between humans and algorithms is particularly interesting. A. Kasych and other authors note that technology does not replace the artist, but rather provides additional tools for the realization of their ideas [4]. The artist determines the parameters and direction of creativity, and the system offers options, expanding the field of choice and stimulating creative reflection. One could even say that algorithms become a kind of partner in creativity, helping to experiment and find new solutions.

Digital technologies are also transforming teamwork in creative projects. Of course, the level of digital literacy of the participants determines how effectively they can integrate algorithmic prompts into their ideas [3]. Generative systems allow for quick evaluation of alternative concepts, model compositions, and select the most promising solutions, which significantly increases the productivity of collective brainstorming. Algorithms help avoid focusing on a single idea and encourage the emergence of more diverse options [10]. In teamwork, this means that participants can create several concepts in parallel, receive instant feedback, and find a common optimal solution faster.

Gradually, personalization of the creative process is becoming a key component of the modern approach to marketing. J. Liang points out that modern platforms are capable of tailoring suggestions to the individual style of the author, enhancing their uniqueness and making the creation process more intuitive [7]. This is especially valuable for experienced designers, as it allows them to combine their own style with experiments with new forms and compositions. Modern platforms support variability in solutions, allowing artists to test ideas and adapt them to specific tasks quickly. For example, an artist can first create a basic composition, then receive several suggestions from the system regarding color combinations or stylistic effects, and then adapt them to their unique direction – and this, without exaggeration, adds a sense of control and authorial presence.

The integration of intelligent algorithms with pedagogical strategies stimulates creative thinking, reduces fear of failure, and encourages experimentation [8].

Generative systems are especially useful for beginners in the visual arts because they offer options for initial ideas, helping them find inspiration faster and form their own compositions [9]. Teaching students and young artists using such platforms allows them to develop critical thinking, independently evaluate compositional decisions, and form their own style. And, surprisingly, it is precisely this flexibility of thinking that is a key factor in a successful creative career.

Adaptive algorithms create an interactive environment where students analyze different options, compare them, and draw their own conclusions. This promotes the development of self-reflection and the ability to make informed decisions about composition, style, and aesthetics [5]. It is also important to pay attention to ethical aspects and intellectual property

issues: the use of algorithms in the creative sphere requires clear rules to maintain a balance between automation and authorial originality [4]. At the same time, students gain experience in the ethical and responsible use of digital tools, which is important in today's academic environment.

A notable instance of the practical implementation of AI is the Artistic Process Futures and AI project [6]. This initiative demonstrates how digital tools can help generate ideas, evaluate compositional options, and experiment with style in real time. The use of language models and platforms, such as ChatGPT and MidJourney, allows artists to quickly obtain textual and visual prompts, conceptual descriptions, and ideas for projects, while maintaining their creative autonomy. Creative professionals have the opportunity to learn in a more flexible, interactive environment, combining their own imagination with algorithmic recommendations, experimenting with form, style, and composition, and receiving rapid feedback.

The integration of generative algorithms, intelligent platforms, and language models into art and design creates conditions for:

- Increasing the efficiency of the creative process is key to allowing staff to focus on more complex tasks and reducing the time spent on routine work. This can be achieved by rapidly generating ideas, testing compositions, and design options.
- Adapting the approach for each author – Systems take into account individual stylistic preferences and skill levels, thereby facilitating a more conducive environment for creativity.
- The development of creativity in students and beginners can be supported by the use of generative algorithms and language models. These tools can help to overcome the fear of making mistakes, encourage experimentation, and facilitate the formation of one's own style.
- Enhancing teamwork – algorithms facilitate rapid evaluation of concepts and selection of optimal solutions.
- Promoting ethical standards and safeguarding authorial uniqueness – technology serves as an assistant, not a substitute for the artist.
- The creation of an adaptive learning environment for creative professions, using platforms such as MidJourney and ChatGPT, allows students to experiment, compare alternative solutions, and develop critical thinking skills.
- The development of professional competencies and autonomy through the use of generative platforms fosters the ability to make independent decisions, integrate innovations, and adapt approaches to one's own style and market requirements.
- The ability to self-reflect and critically evaluate results is being improved. Algorithms are being used to create conditions in which students can compare different approaches, identify the strengths and weaknesses of their own work, and draw informed conclusions [4].

Therefore, the integration of such tools demonstrates significant potential for developing creativity, personalizing the process, and improving teamwork efficiency. The use of generative platforms, adaptive systems, and language models enables artists and students to combine their imagination with algorithmic prompts, test different options, develop critical thinking skills, and integrate new technologies into their creative practices. Platforms such as MidJourney and ChatGPT not only simplify the generation of visual and textual ideas but also stimulate the search for new solutions, support an innovative approach to learning and creativity, helping to form a unique style, adapt the process to individual needs and professional goals, and develop creative autonomy. Importantly, this approach combines academic methodology, practical training, and modern technologies, creating an environment that fosters the development of highly professional artists capable of working effectively in today's digital landscape.

Conclusion. It is becoming increasingly evident that artificial intelligence is not a replacement for artists; rather, it is a true partner. This approach opens up new creative horizons, allowing for rapid experimentation with styles and forms without compromising the artist's unique voice. Consider it a potent instrument that facilitates the rapid realization of concepts and the identification of unorthodox solutions.

These technologies offer significant potential for students and beginners. Modern digital platforms have been shown to help people overcome the fear of making mistakes, provide the freedom to develop a personal style, and make learning more interactive and flexible. We create an ideal environment for nurturing both creativity and critical thinking by combining traditional methods with new tools. The objective of these programs is to equip future professionals with the skills to confidently utilize innovation in their work and thrive in our fast-paced digital world.

References

1. Волинець В. Вплив штучного інтелекту на сучасне мистецтво: можливості та виклики. *Demiurge: ідеї, технології, перспективи дизайну*. 2023. № 6 (1). С. 65–73. <https://doi.org/10.31866/2617-796X.6.1.2023.283933>.
2. Геренко С. Штучний інтелект у графічному дизайні. *Demiurge. Науковий журнал КНУКіМ*. 2024. <https://demiurge.knukim.edu.ua/article/view/300924/293326>.
3. Казаков Г. І. Цифровізація публічного адміністрування: вплив штучного інтелекту на управлінські процеси. *Journal of Public Administration Vernadsky*. 2024. № 4. С. 85–92. URL: https://www.pubadm.vernadskyjournals.in.ua/journals/2024/4_2024/4_2024.pdf#page=85.
4. Касич А. О., Яковенко Я. Ю., Ключ Ю. М., Динько І. Ю. Штучний інтелект та інтелектуальна власність у креативній індустрії: можливості і виклики. *Вісник Національного технічного університету «ХПІ». Серія: Економічні науки*. 2023. № 6. С. 77–83. URL: <https://repository.kpi.kharkov.ua/items/1755866c-2bf0-4c32-8054-e55791083cff>.
5. Чернишенко Н. Використання штучного інтелекту в освіті та науці: сучасні тенденції. *Репозитарій Харківського національного медичного університету*. 2023. URL: <https://repo.knmu.edu.ua/server/api/core/bitstreams/befe2831-cbfa-403f-838e-4ad2de15c54f/content>.
6. Ashby, S., Hanna, J., de Rooij, A., & Kasprzak, M. (2023, December). *Artistic Process Futures and AI*. Netherlands: Futures of Europe Press. URL: <https://research.tilburguniversity.edu/en/publications/artistic-process-futures-and-ai>.
7. Liang, J. (2024). The application of artificial intelligence-assisted technology in cultural and creative product design. *Scientific Reports*, 14, Article 31069. <https://www.nature.com/articles/s41598-024-82281-2>.
8. Oustamanolakis, M. (2024). Creativity, and AI: Strategies for Cultivating Idea Generation in Design Education. *Advances in Artificial Intelligence and Creativity*. URL: <https://books.google.com.ua/books?hl=uk&lr=&id=eaSBEQAAQBAJ&pg=PA273>.
9. Peng, C., Qian, A., Jin, L., Chen, J., Han, E. X., Liang, P. P., Shen, H., Zhu, H., & Hsieh, J. (2025). Exploring Opportunities to Support Novice Visual Artists' Inspiration and Ideation with Generative AI. arXiv preprint arXiv:2509.24167. URL: <https://arxiv.org/abs/2509.24167>.
10. Sattelle, V., & Ortiz, J. C. (2025). AI as an Element to Overcome Creative Fixation in Design Teams. *Proceedings of the Design Society*, 5, 409–418. <https://doi.org/10.1017/pds.2025.10055>.