

COLLECTION

Innovation, integration and modern
problems in the scientific activities of young
researchers and students: theory and
practice

www.d-pressa.com

31
MARCH



Jizzakh, Uzbekistan

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION OF
THE REPUBLIC OF UZBEKISTAN

JIZZAKH BRANCH OF THE NATIONAL UNIVERSITY OF UZBEKISTAN
NAMED AFTER MIRZO ULUGBEK

SCIENTIFIC JOURNAL OF SCIENCE TECHNOLOGY & DIGITAL FINANCE
JOURNAL OF INTERNATIONAL SCIENCE NETWORKS

Innovation, integration and modern problems in the scientific activities of young
researchers and students: theory and practice collection of materials of the
international scientific and practical conference on the topic

(March 31, 2026)

Jizzakh-2026

Innovation, integration and modern problems in the scientific activities of young researchers and students: theory and practice – Jizzakh: Department of economics and tourism of Jizzakh branch of the national university of Uzbekistan named after Mirzo Ulugbek, March 31, 2026, 790 pp.

Editors in charge: Ass.prof. Soy M.P.

In the collection of materials of the conference, the role and role of Science, Education and production in the era of globalization, the pressing problems of the issues of interaction of these processes, feedback on their solutions were presented by mature specialists of the field.

In addition, research on the scientific and practical topic, carried out in the economics, Exact Sciences, Natural Sciences and socio-humanities during the globalization period, information is presented in the scientific and practical fields, which includes the latest innovative technologies in the fields of production.

It can be argued that this collection is one of the specific intersections of current thoughts and innovative ideas of the world of science. This scientific and practical conference was actively attended by professors and scientific researchers engaged in scientific research in Uzbekistan and foreign countries. In increasing the position of the scientific and practical conference, the professors and teachers of domestic and foreign higher educational institutions made a significant contribution.

Professors and teachers of foreign higher educational institutions who actively participated in the work of the conference made a worthy contribution to the high level of interaction with scientists of our country. The processes of international cooperation with foreign countries and exchange with them in the field of Science in the era of globalization have a positive effect on the development of Higher Education, the fields of Science and production. The materials of this conference are special in that they include a wide range of research, from theoretical developments to practical solutions, demonstrating the diversity of approaches and directions in this area.

In conclusion, it should be noted that this scientific and practical conference will be a very useful collection for everyone who is interested in modern research in the fields of further development of Higher Education, Science, Education and production in the era of globalization. The authors are responsible for the content and quality of the articles and abstracts included in the collection.

AI-GENERATED DREAMS: HOW MACHINES ARE SHAPING HUMAN IMAGINATION

Xojabekova Ramzida Uktam qizi

2nd year student of the Jizzakh branch of the National University of Uzbekistan
khujabekovaar@gmail.com

Annotation: This article explores the emerging field of AI-generated creative outputs, often described as “AI-generated dreams,” and their influence on human imagination. It examines the underlying technologies, including neural networks, generative adversarial networks (GANs), and transformer-based models, which enable machines to create novel visual, musical, and narrative content. The paper further analyzes the cognitive, cultural, and societal implications of AI-driven creativity, highlighting both the opportunities and ethical challenges it presents. Case studies from visual arts, music composition, and literature illustrate how AI can augment human creativity and foster collaborative innovation. The article concludes by considering the future trajectory of AI in shaping imaginative processes and the philosophical questions it raises about authorship, originality, and the nature of human creativity.

Keywords: Artificial Intelligence (AI), AI-Generated Content, Creativity and Imagination, Generative Adversarial Networks (GANs), Neural Networks, Machine Learning, Digital Art, Music Composition, Narrative Generation, Human-Machine Collaboration, Cognitive Implications, Ethical Considerations in AI

In recent years, artificial intelligence (AI) has transcended its initial applications in data processing and automation to become a profound influence on human creativity and imagination. One of the most compelling manifestations of this phenomenon is AI-generated content, particularly in the realm of “dreamlike” creations such as visual art, music, narratives, and even conceptual ideation. This article examines how AI-generated dreams are reshaping human imagination, analyzing the technological, cognitive, and societal implications of these advancements.

The Technology Behind AI-Generated Dreams

AI-generated dreams are primarily produced through advanced machine learning algorithms, including neural networks, generative adversarial networks (GANs), and transformer-based models such as GPT (Generative Pre-trained Transformer) and DALL·E. These technologies enable machines to synthesize novel ideas and visuals by learning patterns from vast datasets of human-generated content. Unlike traditional algorithms that follow explicit programming rules, generative AI can produce outputs that are both unpredictable and highly creative, mimicking the spontaneity of human imagination.

GANs, for instance, consist of a generator and a discriminator that work in tandem: the generator creates images or content, and the discriminator evaluates

their realism, guiding the generator to improve iteratively. This dynamic is crucial for producing outputs that resemble human-like dream imagery, merging realism with surrealism. Similarly, transformer-based models use attention mechanisms to predict and generate sequences, enabling AI to compose coherent and imaginative narratives or music that were previously possible only through human creativity.

The Cognitive Implications

AI-generated dreams challenge traditional notions of imagination and creativity. Humans have historically relied on internal cognitive processes such as memory recall, emotional experience, and associative thinking to generate novel ideas. AI, however, can augment or even accelerate this process by presenting combinations of ideas and forms that may not naturally occur in the human mind. For example, an AI might blend architectural styles, musical motifs, or visual elements from different cultural contexts, sparking new creative directions for human artists.

Moreover, interaction with AI-generated content can influence human cognition by expanding the boundaries of what is considered “possible.” Exposure to AI’s creative outputs encourages divergent thinking and can inspire humans to explore unconventional ideas. Cognitive scientists suggest that such interactions may gradually lead to a symbiotic relationship, where AI serves as both a tool and a collaborator in the creative process.

Societal and Cultural Impacts

The rise of AI-generated dreams is also reshaping cultural production. Digital art platforms, music streaming services, and literary communities increasingly feature AI-generated content, creating new opportunities for creators and audiences alike. This democratization of creativity allows individuals without formal artistic training to experiment with imaginative forms, effectively lowering barriers to entry in creative industries.

However, these developments also raise ethical and societal questions. Concerns about authorship, originality, and intellectual property emerge as AI-generated works proliferate. Additionally, there is a risk of homogenization if AI models are trained predominantly on widely available datasets, potentially reinforcing existing cultural biases instead of diversifying creative expression. Societal discourse must therefore balance enthusiasm for AI-driven creativity with critical reflection on its implications for culture, identity, and human agency.

Case Studies of AI-Generated Dreams

1. **Visual Arts:** AI models such as DALL·E and MidJourney have produced artworks that blend surreal landscapes with hyper-realistic details, challenging human perceptions of beauty and imagination. Exhibitions of AI-generated art have been held in prominent galleries, demonstrating that machine creativity can evoke emotional and aesthetic responses similar to human art.

2. **Music Composition:** AI platforms like OpenAI’s MuseNet and AIVA compose music that spans genres and eras, creating compositions that are novel yet harmonious. Musicians have reported using AI outputs as inspiration for new works, illustrating the collaborative potential of AI in creative processes.

3. **Narrative and Literature:** GPT-based models generate complex stories, poems, and speculative fiction that explore imaginative scenarios. Writers can prompt AI to explore hypothetical worlds or alternative histories, effectively using machines as a creative brainstorming partner.

The Future of AI and Human Imagination

Looking forward, AI-generated dreams are likely to become more immersive and interactive. Advances in virtual reality (VR) and augmented reality (AR) could allow users to experience AI-generated dreamscapes in fully sensory environments, blending sight, sound, and haptic feedback. Furthermore, the integration of AI into everyday creative tools will likely foster a more collaborative creative ecosystem, where humans and machines co-create in real time.

The philosophical implications are profound: as AI continues to generate imaginative content, society must consider what distinguishes human creativity from machine-generated novelty. Some theorists argue that AI will never replicate human consciousness or emotional depth, while others contend that the distinction between human and machine imagination may become increasingly blurred.

Conclusion

AI-generated dreams represent a transformative frontier in the interplay between technology and human imagination. By synthesizing data into novel and evocative forms, AI not only expands the possibilities for human creativity but also challenges traditional conceptions of authorship, originality, and the cognitive process itself. As these technologies continue to evolve, their impact on art, literature, music, and culture will likely deepen, inviting humans to explore a new symbiosis with the machines that can dream alongside them. Ultimately, AI-generated dreams are more than a technological novelty—they are a catalyst for redefining imagination in the 21st century.

References:

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*, 27, 2672–2680.
2. Vaswani, A., Shazeer, N., Parmar, N., Uszkoreit, J., Jones, L., Gomez, A. N., Kaiser, Ł., & Polosukhin, I. (2017). Attention is all you need. *Advances in Neural Information Processing Systems*, 30, 5998–6008.
3. 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*.
4. OpenAI. (2023). DALL·E: Creating images from text. *OpenAI Research*. Retrieved from <https://openai.com/dall-e>
5. McCormack, J., Gifford, T., & Hutchings, P. (2019). Autonomous creativity: AI as a co-creator in art and music. *Leonardo*, 52(2), 122–129.
6. Цой М., Камолов Д. ЗНАЧЕНИЕ И РОЛЬ ДЕЯТЕЛЬНОСТИ СУБЪЕКТОВ МАЛОГО ПРЕДПРИНИМАТЕЛЬСТВА В ЭКОНОМИКЕ:

- МИРОВОЙ ОПЫТ И ПРАКТИКА УЗБЕКИСТАНА //Academic literature. – 2025. – Т. 1. – №. 1. – С. 1-105.
7. Saitov S. et al. ZAMONAVIY FILOLOGIYA FANLARIDAGI DOLZARB MASALALAR //Scientific practical conference. – 2025. – Т. 1. – №. 1. – С. 419-422.
8. Eshboyeva M., Eshboyev T., Saitov S. GREEN ECONOMY AS THE FOUNDATION OF SUSTAINABLE DEVELOPMENT: GLOBAL PERSPECTIVES AND NATIONAL STRATEGIES //Scientific practical conference. – 2025. – Т. 1. – №. 1. – С. 235-238.
9. Saitov S. et al. O ‘ZBEKISTONDA SANOAT KORXONALARIDA INVESTITSION FAOLIYATNI RAG ‘BATLANTIRISH YO ‘NALISHLARI //Новости образования: исследование в XXI веке. – 2025. – Т. 3. – №. 33. – С. 728-730.
10. Saitov S. et al. SANOAT KORXONALARIDA INVESTITSION FAOLIYATINI TAKOMILLASHTIRISHNING ILMIY-NAZARIY ASOSLARI //Новости образования: исследование в XXI веке. – 2025. – Т. 3. – №. 33. – С. 731-733.
11. Eshboyeva M., Eshboyev T., Saitov S. GREEN ACCOUNTING IN UZBEKISTAN: SUSTAINABILITY AND INTERNATIONAL FINANCIAL REPORTING STANDARDS //Scientific journals" D-PRESS SERVICES". – 2025. – Т. 1. – №. 7. – С. 88-91.
12. Saitov S., Nuraliyeva S. BOZOR IQTISODIYOTIDA PSIXOLOGIK BOSHQARUV SHAKLLARI //Scientific practical conference. – 2025. – Т. 1. – №. 1. – С. 447-452.
13. Axrorov E., Saitov S. O‘ZBEKISTONDA ISHSIZLIK DARAJASINI KAMAYTIRISH VA YANGI ISH O ‘RINLARINI YARATISH //Scientific practical conference. – 2025. – Т. 1. – №. 1. – С. 136-140.
14. Nasrullayeva S., Saitov S. RAQAMLI TEXNOLOGIYALAR ASRIDA SUN’IY INTELLEKTNING JAMIYAT RIVOJI, INSON FAOLIYATI VA IJTIMOIIY-IQTISODIY JARAYONLARDAGI O ‘RNI //Scientific practical conference. – 2025. – Т. 1. – №. 1. – С. 105-108.
15. Kamolov D. ETHICS OF ARTIFICIAL INTELLIGENCE: EXPLORING THE MORAL AND SOCIAL IMPLICATIONS OF AI IN CONTEMPORARY SOCIETY //SGS-Engineering & Sciences. – 2023. – Т. 2. – №. 02.
16. Kamolov D. R. O. G. L. O'zbekistonda demokratiya va axloqning zamonaviy muammolari va yechimlari //Academic research in educational sciences. – 2022. – Т. 3. – №. NUU Conference 2. – С. 348-352.
17. Kamolov D. GLOBALIZATION PHENOMENON AND GLOBALISM //Journal of Contemporary World Studies. – 2023. – Т. 1. – №. 1. – С. 4-9.
18. ЦОЙ М. РОЛЬ ГЕНДЕРНОГО РАВЕНСТВА В ВОПРОСАХ СОКРАЩЕНИЯ БЕДНОСТИ И СОЗДАНИЯ ДОСТОЙНЫХ РАБОЧИХ МЕСТ–МИРОВОЙ ОПЫТ И ПРАКТИКА УЗБЕКИСТАНА //Архив научных исследований. – 2022. – Т. 2. – №. 1.