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Creative Serbia and AI: Potential of Shaping Creative Generative Artificial Intelligence in Arts of the Future through the Example of Midjourney/Discord Application

Abstract: The paper aims to investigate how artificial intelligence (AI) can shape the future of artistic creativity in Serbia. This analysis will focus on the potential of new algorithmic tools of creative generative AI, more specifically on applications such as Midjourney/Discord, as well as the specific examples and possibilities of artistic expression that they certainly open up. The integration of AI and art opens up new possibilities for creators and audiences, but at the same time raises questions about authenticity, originality and the role of the artist. Moreover, this paper will explore how AI technology affects the process of creating works of art, audience perception and cultural implications. Through an interdisciplinary approach that combines art, technology and social sciences, this paper will provide insight into the potential and challenges brought by the integration of artificial intelligence into art, especially in the context of creative Serbia.

Keywords: creative Serbia, generative artificial intelligence, art, future, Midjourney/Discord, algorithms, processes

Introduction

The need for creativity and innovation in Serbia is the key aspect which may affect the development and progress of society in different spheres,

including economy, culture, education and the technological sector. The analysis of this matter requires considering Serbia's actual states of affairs, challenges and potential in the field of creativity and innovation. What should be considered

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first is the contextual framework. Serbia is facing different challenges, including economic inequalities, bureaucracy, still insufficiently developed educational systems and brain drain, which poses a serious threat to the future development of the country. In such an environment, creativity and innovation become key factors which may contribute to the resolution of these problems. Creativity can be seen as an ability of generating new ideas, while innovation refers to the application of these ideas in practice for the sake of creating new values. It is necessary to encourage the development of creative skills through permanent creative education and cultural programs.^[2] In addition, it is important to create a thoroughly stimulating environment for innovation, which includes support to research and development, facilitation of the business environment, as well as constant strengthening of ties between the academic community, the private sector and the state.

Some of the key sectors in which Serbia can achieve significant progress through creativity and innovation are the technological sector and Industry 4.0^[3]. The development of high-tech industries, such as information technologies, biotechnology, artificial intelligence and digital media, may create new workplaces, attract foreign investments and improve the country's competi-

tiveness in the international market. However, to achieve this potential, it is necessary to invest in education, infrastructure and research, as well as in the already-mentioned creation of the stimulating environment for innovative startups. Moreover, creativity and innovation may also contribute to the accelerated development of cultural and creative industry in Serbia, particularly in the field of applied arts, cinematography and music art. Encouraging artistic creativity, supporting cultural events and festivals, as well as promoting cultural tourism, can contribute to the country's economic development and the strengthening of its international reputation. By encouraging creative industries, technological innovation and cultural creation, Serbia may achieve significant progress in economic, cultural and social terms, creating sustainable future for all its citizens.

Serbia has an extremely rich artistic tradition and cultural heritage, but the need also arises for new forms of expression and innovation in art. Introducing creative generative AI^[4] in this field can contribute to the creation of new, innovative and even yet unseen works of art which enable artists and designers to explore new forms and fields in art and to express themselves in completely new ways. Digital expression with generated artistic visuals strives towards a new chapter and a new era of creative formation.

[2] See: <https://serbiacreatives.rs/> (Accessed on 15. 4. 2024.)

[3] See: <https://www.weforum.org/about/the-fourth-industrial-revolution-by-klaus-schwab/> (Accessed on 14. 4. 2024.)

[4] AI – artificial intelligence

Artificial intelligence in art

The emergence of artificial intelligence, as it is already known, opens up completely new horizons in art. Generative AI technologies enable computers to create original images, music, texts and other forms of creative expression (Figoli, Mattioli, Rampino, 2022, p. 45). Artists, designers and architects can use AI as a tool for experimenting, installation or even as a creative digital partner.^[5] This technology opens up possibilities for creating works of art which go beyond human imagination and bring new aesthetic and conceptual expressions in Serbian art. Comparative analysis of artificial intelligence in art can cover various aspects, including the application of AI in different branches of art, the impact on the process of creating works of art, audience perception and cultural implications. In painting, AI algorithms can generate new pictures based on the style features of eminent artists or even create completely new aesthetics of expression. In music, AI can compose, generate sounds or even emulate the voices of famous performers, while in film it is used for generating special effects, animation, post-production or even creating scenarios based on the analysis of the existing films.

In the process of creating new works of art, AI helps immensely in the experiment. Designers can use AI as a tool for exploring new ideas,

conceptual artists can use it for experimenting with different techniques, and it can particularly accelerate certain stages in the process of the creation itself of works of art, particularly in the sector of applied art (Figoli, Mattioli, Rampino, 2022, p. 35).

Artificial intelligence as a new medium definitely brings about a revolution in art, thus opening up new horizons for creators and audience, at the same time posing challenges to the relation and role of the artist in cultural implications of technological change. It is crucial to continue research, dialogues and public debates on this topic so that we, as Serbian society, can understand both the potential and the limitations of this interaction related to artificial intelligence, and ensure that this technology serves general cultural progress.

Above all, it is always interesting to consider the potential of art generated by artificial intelligence through the works of skilful and creative individuals worldwide, for example Professor Joshua Vermillion^[6] from UNLV in Nevada. Professor Vermillion is only one in a multitude of those who have begun experimenting with generative AI. Since these technologies continue to develop and become increasingly sophisticated, we can expect even more intensive integration of AI into the world of art. It is inevitable in the future of the majority of creative industries.

[5] See: The Intersection of Art and AI | Ai-Da Robot | TEDxOxford: <https://www.youtube.com/watch?v=XaZJG7jiRak> (Accessed on 16. 4. 2024.)

[6] See: <https://vermillion.faculty.unlv.edu/> (Accessed on 17. 4. 2024.)



Combining art and artificial intelligence: artistic spatial installations by Professor Joshua Vermillion, generated on the Midjourney/discord platform
Source: artisticcloseup.com

Creative generative AI and its potential: Midjourney/Discord application as a platform for artistic interaction

We have defined creative generative AI as a field dealing with the creation of new types of visualization, i.e., works of art by using algorithmic processes and computer learning (Muntañola, 2022, p. 16). However, this technology, apart from being able

to analyze the existing works of art and generate new ideas, can also make possible the cooperation between artists and designers in the creation of completely new interdisciplinary works of art. The application of creative generative AI in Serbia can provide artists and designers with completely new possibilities for expressing and improving creative processes.

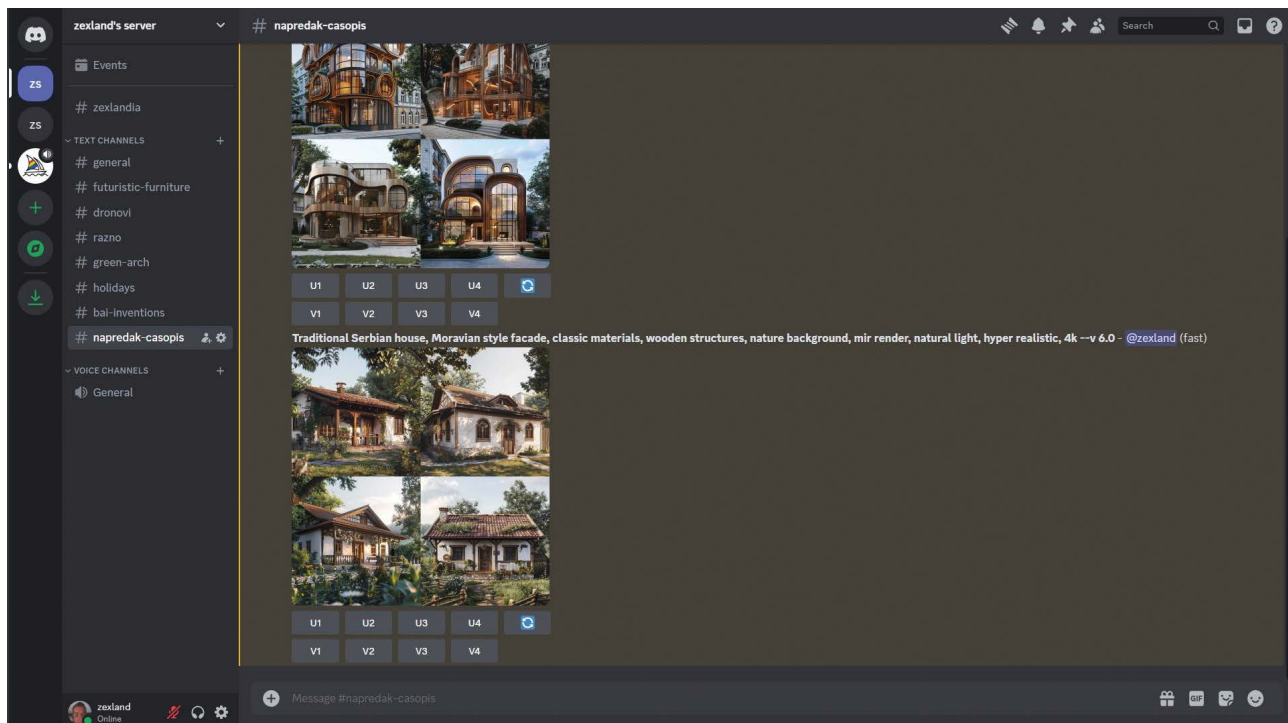
One of the currently most popular online applications is the Midjourney/Discord^[7] platform used

[7] See: <https://www.quora.com/How-does-Midjourney-Discord-work> (Accessed on 15. 4. 2024.)

for generating different virtual objects. To generate any visualization, we must first open a Discord account and subscribe to the Midjourney server. When we join this server, we can begin generating images, for which the term “prompting” is used, by entering certain textual commands, but with the compulsory first prefix: `/imagine <prompt>`, where `<prompt>` is the first textual description of the image we want to generate. For example, to generate an image of a cat sitting on the beach, we would type the following command: `/imagine <prompt> /imagine a cat sitting on the beach.`

The so-called Midjourney bot will then generate this image based on our query and send it back to the Discord account.

Visualizations generated on the Midjourney/Discord platform are publicly visible in the gallery of the members, but if we have “pro or mega” subscription, we can generate private images visible only to us. We need to be as precise as possible in our queries. The more specific we are in the queries, the better the results will be. We can also use several queries in one command. This may help us to generate more creative and interesting results.



Entering a textual command (prompting)

Source: Midjourney/Discord



The result: an example of the traditional Serbian house built in Morava style, as seen by AI
Source: Midjourney/Discord

Midjourney and Discord as a platform may with time grow into a place for networking Serbian artists, designers and architects, as well as become a creative online hub for discussing art topics and collaborating on projects, either within the academic community or economy. The absolute benefit is that artificial intelligence in this case can definitely help in finding and connecting similar talents from different artistic, as well as technical-technological fields based on similar interests and professional goals in the future.

Arts of the future

Gilles Lipovetsky, French philosopher, sociologist and theoretician of culture, is well-known for his papers dealing with the phenomena of modern society, individualism, post-modernism and changes in cultural patterns. On the other hand, the topic of the potential of shaping creative generative artificial intelligence (AI) in arts of the future opens up a wide range of discussions about how this technology can transform the artistic

process and expression. Comparing these topics gives us insight into the ways of interconnecting technological progress and cultural changes. In his extraordinary book *L'ère du vide*, Lipovetsky points in a visionary way to the future tendencies of “digital arts” and states that “the use of the dispositive for automatic processing of information in the beginning attracted only experts such as Michael Noll or Manfred Mohr,^[8] capable of mastering not only this technique, but also the combinatorics of mathematical and logical type”. Furthermore, it is emphasized that “the works created by them, inspired by abstract geometry rather than interest in figuration, play with graphic elements, series and algorithmizing of colour” (Lipovetsky, 2011, p. 317). In that context, art plays a key role as a form of expressing and articulating individual experiences, identities and broadening the boundaries of traditional artistic practices in the forthcoming times.

Lipovetsky also analyses the impact of technological changes on culture and society, including digitization and globalization. However, the question arises as to how these two aspects can be in mutual cohesion. One of the potential trends is that AI will enable artists to explore new dimensions of individuality and identity through interaction with the technology. For example, AI can analyze patterns of human behaviour and make personalized works of art which reflect unique aspects of individual experiences. Are

they synthesized simulacra of the already known works of art? In addition, AI can serve as a toll for experimenting with completely new aesthetic trends and forms of expression, which contributes to the diversity and innovation, as well as to simulation in artistic creation and, thus, new and still unknown arts of the future. On the other hand, there is also a potential challenge regarding the use of AI in art, and that is the question of authenticity and originality. Since AI technology is becoming more and more advanced in the creation of works of art, the question arises as to whether those works can really be considered authentic or original, having in mind that they have been generated by algorithms, i.e., simulated from billions of pixels invisible to the naked eye from the *world wide web*. This question can provoke discussions about the topic of simulation of art and the role of the artist in the creation of a new algorithmic work of art.

Simulation and simulacra in the context of producing the surreal is perfectly described by Jean Baudrillard) when speaking about a three-dimensional simulacrum: “But why would a three-dimensional simulacrum be closer to the real one than the two-dimensional one? It would like to be like that, but its paradoxical effect is, on the contrary, to make us more sensitive to the fourth dimension as a hidden truth, a secret dimension of each thing, which suddenly acquires the strength of obviousness” (Baudrillard, 1979, p. 109).

[8] See: The Art of Generative Thinking | Manfred Mohr in Conversation with Margit Rosen. <http://www.emohr.com/> (Accessed on 18. 4. 2024.)



An example of exploring the form of an amorphous modern façade in the colours of the Serbian flag, as seen by AI
Source: Midjourney/Discord

It is evident that the hidden creativity which is invisibly intertwined among trillions of pixels, reproduced in an unbelievably short time, also has its other hidden truth which we still cannot see, at least not legally, within regulating rights and obligations of the future “AI prompt designers”^[9] in the course of this form of the generative AI creative process. Just as in any

new field, we believe that this matter will be regulated in the near future, both in the world and in our country, and that it will not remain lost in the fourth dimension.

Above all, the fourth dimension concept in art is often related to the idea of time, space and motion. Throughout history artists have tried to express these ideas through different media, such as paint-

[9] See: <https://www.internimagazine.com/features/che-cose-un-prompt-designer-e-come-diventarlo/> (Accessed on 20. 4. 2024.)

ing, sculpture, performance or architecture. The examples of the works of art exploring the fourth dimension include the works such as *Nude Descending a Staircase (No. 2)*^[10] by Marcel Duchamp (1887–1968) from 1912, or *Portrait of Daniel-Henry Kahnweiler*^[11] by Pablo Picasso (1881–1973) from 1910, which shows movement and motion in several dimensions of the Cubist expression.

At the very end, we made a small generated AI experiment on the Midjourney/Discord platform, where we put Picasso's *Portrait of Daniel-Henry Kahnweiler* in the application as an inspiration for the modern sofa design.

By analyzing different trends, technological innovation and styles, we have observed key characteristics and potential brought by new arts in the future. They constitute a fascinating, dynamic and infinitely unexplored space of creativity that is constantly shaped under the effect of technological, cultural and social changes in which we live. Being interdisciplinary, under the effect of AI as a new medium, they will give us new findings, create new artistic skills and new artists for the 22nd century. Finally, the arts of the future promise an exciting and inspirational future which invites us to explore, dream and create together.



The result of the experiment of generating a work by Picasso

Source: Midjourney/Discord

[10] See: <https://philamuseum.org/collection/object/51449> (Accessed on 21. 4. 2024.)

[11] See: <https://www.artic.edu/artworks/111060/daniel-henry-kahnweiler> (Accessed on 22. 4. 2024.)

Conclusion

Through the analysis of the potential of shaping creative generative artificial intelligence in arts of the future using the example of Midjourney/Discord application, we gain insight into various possibilities provided by this technology, but also into challenges we encounter in the process. As we have already stated, art in Serbia has deep roots and rich heritage which goes back to different periods and cultural influences. The integration of AI into art can only lead to even greater enrichment of the already acquired Serbian heritage by creating new forms of expression, experimenting with new aesthetic approaches

and interactive experiences for the audience. The Midjourney/Discord application is an example of how AI can be used for generating extremely creative content which inspires, provokes and engages artists, designers, architects and future users.

We conclude that the potential of shaping creative generative artificial intelligence in the arts of the future through the example of the Midjourney/Discord application provide insight into the dynamic combination of technology, local culture and creativity. Despite challenges, this interaction brings possibilities for innovation, changes and sustainable development of creative industries in Serbia, thus producing a rich and inspirational cultural scene for our future generations.

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