

THE INTERSECTION OF ARTIFICIAL INTELLIGENCE AND ARCHITECTURE: A CASE STUDY WITH MIDJOURNEY

DENYS SHATALIUK, PhD student

OKSANA FOMENKO, Professor, Doctor of Science in Architecture, Scientific Adviser

OKSANA DEMYDIUK, Associate Professor, PhD in Psychology, Language Adviser

O. M. Beketov National University of Urban Economy in Kharkiv

Introduction. Artificial intelligence (AI) technologies are increasingly permeating nearly every professional field. While AI presents numerous opportunities, it also raises critical questions regarding ethics, integrity, and the uniqueness of solutions. Using the example of the Midjourney service, this research will explore when it is appropriate to incorporate AI into the design process, how it impacts creativity, and the potential advantages and drawbacks it presents.

Main Body. Midjourney is an independent research lab and AI service that generates digital images based on textual descriptions. This service has gained significant popularity among professionals in creative fields.

We employed Midjourney while working on the concept for the development of an educational institution's campus. The client's request was to create a general architectural vision of the project, intended for presentation to stakeholders and potential investors. Given the tight timeline, we sought an efficient tool that could aid the client in conveying the project's concept effectively. After experimenting with AI, we familiarized ourselves with Midjourney's features and realized that the key to achieving optimal results lies in providing a detailed and precise prompt, much like in traditional design, where a clear concept is essential. After understanding the client's needs, we formulated the functional program and identified the scenarios that would be best represented using AI-generated images. Only after defining the concept, desired spatial solutions, and material preferences did we begin generating the images.

Researchers have explored the acceptance of Midjourney in AI-generated content to assess its impact on the design process. They found a strong correlation between the actual use of Midjourney and designers' attitudes and behavioral intentions, with a positive influence on design inspiration. The results suggest that combining AI-generated content with traditional design methods enhances creativity and motivation, particularly among design students, indicating its potential for use in higher education (Shen et al., 2023).

From our practical experience using Midjourney in this real-world project, we concluded that the service is most effective in the early stages of a project, such as when exploring prototypes or presenting initial ideas. It can also enhance communication with clients, as it better conveys the direction of the project, captures the intended atmosphere, and streamlines the decision-making and approval process. However, it is important to note that the service is not suited for

generating precise proportions or analyzing the urban context. It is best utilized during the conceptualization phase and should not replace the architect's creative and interdisciplinary approach.

Excessive or unethical use of AI could pose risks to the architectural profession, such as the homogenization of designs, which may diminish the individuality of projects, reduce overall creativity, and limit conceptual thinking. The service could also negatively affect projects if architects rely solely on AI-generated outputs without considering the social, cultural, and historical contexts. Since Midjourney generates images based on existing projects and visual references, there is a potential risk of infringing on copyright or unintentionally replicating other designers' work.

Conclusions. In recent years, Generative Artificial Intelligence (GenAI) software has become widely adopted, offering architects a powerful tool for quickly visualizing their design ideas. This shift has sparked discussions about the potential benefits and disruptions AI may bring to the architectural profession (Tan & Luhrs, 2024). Artificial intelligence is a valuable tool that can optimize and accelerate various processes in design and communication. However, it is essential to strike a balance between leveraging technology and preserving creativity. AI will inevitably reshape education and set new expectations for architects. While it brings significant opportunities, it is crucial to remain aware of the risks it poses, particularly in terms of diminishing professional skills and traditional creative abilities. "Midjourney will change the concept of design and advertising in the next few periods and employing this new technology in the field of advertising and design will lead to impressive, unconventional and interesting results" (Hanna, 2023, p. 44). Ultimately, the future of architecture lies in the ability to harness the power of AI without sacrificing the human touch that defines the profession.

References:

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