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ARTIFICIAL INTELLIGENCE IN THE CREATION OF BOOK DESIGN

Svitlana Kukol

*Teacher, specialist of the second category
Department of Design and Social and Cultural Studies
Cherkasy State Business College, Ukraine
e-mail: sgek1303@ukr.net*



Abstract

In recent decades, artificial intelligence has played a significant role in numerous industries, changing approaches to problems and optimizing various processes. Despite the fact that artificial intelligence is confidently entering our everyday life, for many it is still associated with science fiction or something too distant and unknown. However, such tools are used every day, even when we are not aware of it. More recently, artificial intelligence has reached another, more interactive level: now it can create whole texts that are logically connected to each other, answer questions and create illustrations. One area that has felt the real impact of artificial intelligence is book design.

Key words: *book design, book graphics, artificial intelligence, neural network, copyright.*

Introduction

Book design has always been a key element of the reader's interaction with a work of literature. With the recent rise of artificial intelligence, book design is gaining new opportunities that are revolutionizing the way we think about creating and reading books.

Artificial intelligence refers to a number of technologies that allow performing "intellectual" activities without human intervention. Among the

most famous tools are MidJourney, DALL-E, Stable Diffusion, which create digital images; ChatGPT, Bard or Gemini, with which you can write a text and also find an answer to a question [1].

Overview

One of the important elements of book design is the cover. Artificial intelligence enables authors and publishers to create unique and attractive covers using algorithms that analyze the key themes and moods of a book.

Ukraine also uses such capabilities of artificial intelligence tools. Although it is mostly about covers and illustrations, the Ranok publishing house has already published a book entirely generated by a neural network (under the guidance of editor Mariana Horyanska and designer Oleksandr Kovalevsky) – I Want to Go to Mars (Fig. 1.) [1].



Fig. 1. Cover of the book “I want to go to Mars” generated by artificial intelligence. Photo: Ranok publishing house [1]



Fig. 2. Generated by artificial intelligence (and revised by the artist) front cover of the book from the Bearded Tamarin publisher [1]

A number of publishing houses are already creating covers for their books with the help of artificial intelligence: Tempora Publishing House – for “Better Not to Read” by Katia Orlovska, “Pravik and Other Times” by Olga Tokarchuk; Staryi Lev Publishing House – illustrations for poetry book “The Book of Love and Rage” by Maryna Ponomarenko; Bearded Tamarin Publishing House – for “Buzz, Sting, Bite: Why We Need Insects” by Anne Sverdrup-Thygeson (Fig. 2). Komubook is also considering this possibility[1].

Creating illustrations is an integral part of book design, which always attracts the attention of readers and helps to create a visual world that impresses. Artificial intelligence opens new perspectives in this field, improves the process of creating illustrations for books.

Algorithms can analyze text and automatically generate appropriate visuals that reflect key scenes or characters, simplifying the process of creating illustrations and allowing authors and designers to more effectively convey the essence of a work. Thus, the possibilities of visualizing literary works are expanded and the uniqueness of visual images for the reader is ensured.

With the help of artificial intelligence, you can create illustrations, remove unnecessary or improve the quality, and create various effects. Skin smoothing, stylization, scaling and other standard photo editor options can now be implemented much faster. It is a powerful tool for making creative illustrations based on the description or using your own pictures to create new images [2].

Artificial intelligence can help choose the most appropriate fonts and optimal placement of text on the page. This not only facilitates the work of designers, but also provides better readability and aesthetic appearance of the book.

Artificial intelligence makes possible the use of augmented and virtual reality in book design, helps in the integration of illustrations with elements of interactivity and animation. Readers can interact with characters, objects, and events through the use of modern technology. This creates a visual experience of direct perception and a deeper level of immersion in literary works, where readers can interact with the illustrations, explore additional details and uncover additional content.

However, neural networks do not always work perfectly. Sometimes they produce results that are not very accurate or do not understand how people interact with objects at all, which is why some visual errors are associated with them. For example, the result of the image of a girl taking a picture of herself in a mirror looks controversial and even scary in some places

(Fig. 3). There may also be problems with the depiction of animal paws, which may not look very realistic and natural (Fig. 5), extra fingers appear in the depicted people or hands disappear (Fig. 4), the pictures themselves resemble the works of other artists [3].



Fig. 3. Image of a girl taking a picture of herself in the mirror [3]

Fig. 4. Images of people with extra fingers [3]



Fig. 5. Images of animals that may not look very realistic [3]

Creating illustrations using artificial intelligence can raise questions about copyright and ownership of creative materials. The legal status of artificially generated illustrations can be complex and depends on several factors. Typically, copyright is recognized for the creative contribution of the person who creates the work. In the case of artificial intelligence, the question may arise whether the algorithm can be considered the creator of the illustrations or whether the creative contribution of the user who selects or customizes the generated illustrations is recognized.

Another important aspect is the ownership of the algorithm used to generate the illustrations. If the algorithm belongs to a specific company or developer, they may have ownership rights to the generated works. However, it is known that there are disputes about whether algorithms can be given the legal status of "creators".

If you use platforms or services that provide artificial intelligence to create illustrations, it is important to read the license terms. Some platforms may own certain rights to the generated materials, so it is important to note the terms of use and determine who owns the rights to the created illustrations.

The use and distribution of content generated by artificial intelligence imaging applications should always be guided by logic and respect for others. The question of copyright for AI-generated images is difficult to answer because the legal aspect of AI-generated works is not defined in copyright law. Answers may vary from country to country. If applications are used to create recognizable characters or brands, they may be protected by copyright or trademark law. If you plan to use these images, you must obtain permission from the copyright holder. To ensure the safe and responsible use of AI image generation applications, the community takes various measures. These include automatic checks of the entered text for terms that may generate inappropriate content [4].

Conclusions

The use of artificial intelligence in book design, in particular, in book graphics, opens up new opportunities and provides greater creativity in the creation and perception of literary works, combines a traditional artistic approach with advanced technologies, becomes not only a means of implementing creative ideas, but also a mechanism that promotes personalization and innovation in the world of literary art. This allows you to create books that attract new readers, fascinate with their story, mesmerize with visual aesthetics and make reading a unique experience.

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