



ПЛАТФОРМА 4 ГРАФІЧНИЙ ДИЗАЙН У ПОЛІКУЛЬТУРНОМУ ПРОСТОРИ

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OPPORTUNITIES OF INVOLVING ARTIFICIAL INTELLIGENCE IN PRINT DESIGN

ADASCALIȚA Lucia, COLESNICENCO Dina
Technical University of Moldova, Chisinau, Republic of Moldova
dina.colesnicenco@dttp.utm.md

This work proposes the highlighting of practical aspects of involving Artificial Intelligence in generating concepts for various print products. In that direction, there will be conducted some case studies that have AI software as their basis: Craiyon – for generating images, Removebg – for deleting the backgrounds, Khroma – for generating color palettes, UIZARD – for easily creating site wireframes. The results mean to highlight some pros and cons of using AI, mistakes to avoid when using it, and facets that could be improved with time. Thus, all chromatic and graphic concepts generated by AI will be combined to create a standalone print product.

Key words: artificial intelligence, design, print products, chromatic palettes.

INTRODUCTION

Artificial Intelligence is a tool that is receiving more and more attention from representatives of creative industries (cinematography, animation, music industry, journalism, AR, VR industry), also including the field of printing [1]. Artificial Intelligence refers to all computerized means through which human ideas can be materialized, these being created through mathematical formulas and the processing of informations inserted by the user [2]. Regarding the use of AI, it is essential to mention it's advantages and disadvantages, especially now that designers have divided opinions on the morality of using this tool (table 1).

Table 1. Advantages and disadvantages of AI

Advantages	Disadvantages
Offers designers the opportunity to focus on more complex works	Depends on the involvement of the designer
AI can do routine work: repetitive or memorization tasks	Reduced flexibility and adaptability when new requirements or product models appear
Optimization of processes by processing a big quantity of data, from which the designer will choose the best	Lack of creative or social skills
No need for manual work, which reduces materials costs	-



PURPOSE

The reasearch paper aims to identify several AI-based software, able to ease the work of designers in the printing field, to make case studies on print products such as: label, poster, website. At the same time, specific work steps were analysed, some challenges and the level of finality of a product generated through AI.

RESULTS AND DISCUSSIONS

In order to analyze the efficiency of AI in perceiving and transforming ideas into printed products: a label or poster, *Crayion V2* web software was used. The soft has the ability to generate images based on keywords entered by the current user [3]. Accordingly, the following keywords were inserted: packaging, container, peach juice. The generated results are 9 photos that correspond to needed requirements, with small deviations that can be easily fixed (fig. 1).

From the 9 images generated to create a poster design, only a specific one was selected, it being relatively malleable in the context of having multiple graphics, and represents an object visible in it's all definition. Most AI-generated products are visually perceptible, but not fully represented, which makes it hard on the designer to use them when creating his work. The final result needs further graphic processing, which involves the use of other software, other than the relatively "primitive" tools such as the *crop* or *pen* tool. With the help of *Removebg* web software, it was possible to quickly and effectively remove the background of the product (fig. 2) [4].



Fig. 1. Images created in web soft *Crayion V2* [4] – *Crayin V2 Web Soft, 2023*



Fig. 2. Removal of the background with the web soft *Removebg* [5], *Removebg Web Soft, 2023*



Fig. 3. Poster with the help of AI-generated elements – Colesnicenco Dina, 2023

To create a poster it is essential to use softs that generate colors or color palettes, necessary to the making of a harmonious compositional space. In that way, a case-specific soft would be *Khroma*, an app that, on the basis of the user's preferences, creates unique color palettes [5, 6]. Initially, 50 colors are selected, preferably from different areas of the chromatic circle. The results were various color palettes and ways in which they can be combined to create interfaces clear and pleasant to the eye (fig. 4).



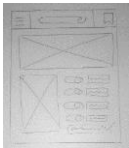
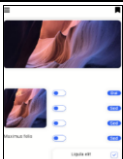



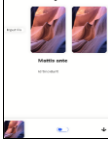
Fig. 4. The generating of color palettes through *Khroma* [6] – *Khroma Web Software, 2023*



Naturally, the app was focused on the initial choices, having little to none information about other preferences the user could have. Intentionally, the author chose more pasteled colors, respectively obtaining a reduced variety of denser ones. The soft has made the work easier by pre-determining some sets of color palettes, and our main task as designers lies only in choosing the best variants. Thus, the experiment resulted in obtaining a specific aesthetic solution, as far as the chromatic range is concerned, for the advertising poster promoting Bio peach juices (fig. 3).

From the perspective of the digital environment, AI offers even more possibilities for handling information, it becoming an editable resource in the creative process. In order to analyze the computer's efficiency in perceiving and transforming theoretical concepts into visible ideas, 3 sketch-pictures were processed in the web software *UIZARD*. The experiment involves the conversion of sketches representing web pages. The "skeleton" of those pages were drawn according to the manual offered on the site [7], that indicates acceptable and unacceptable versions of the uploaded graphics. The purpose of the application is that of transforming a theoretical wireframe into a practical one, that can be modified anytime once generated. The results were included in table 2, with an analysis focused on quality.

Table 2. Results of converting wireframes in UIZARD

Own sketches	Result in AI	Pros	Cons
 <p>Colesnicenco Dina, 2023</p>	 <p>UIZARD Web Soft, 2023 [7]</p>	<ul style="list-style-type: none"> -Accurate perception of the positions of images, buttons and text boxes; -Accuracy of indicated button types. 	<ul style="list-style-type: none"> -Avoidance of generating the search box; -Excessive distance between control buttons and text boxes;
 <p>Colesnicenco Dina, 2023</p>	 <p>UIZARD Web Soft, 2023 [7]</p>	<ul style="list-style-type: none"> -Almost exact perception of the position of all boxes; -Correct analysis of the square page format. 	<ul style="list-style-type: none"> -Unaligned text next to the image.
 <p>Colesnicenco Dina, 2023</p>	 <p>UIZARD Web Soft, 2023 [7]</p>	<ul style="list-style-type: none"> -The choice of the vertical format based on the sample image. 	<ul style="list-style-type: none"> -The failure of identifying the position of images due to the complexity of the page arrangement; -Excessive white spaces on the entire surface of the page; -Wrong conversion of some buttons.



The results indicate a fairly high compliance of the concepts with the perception of the software, considering that the sketch was drawn manually, without concrete guidelines. Some mistakes are present, but are not a big obstacle, considering that the generated content can be edited after. There is also the possibility of errors due to not following the provided manual by the site exactly.

CONCLUSIONS

Using to tool known to us as AI, designers can create numerous variants of a specific design of a print product, after choosing the best one or generating other options.

Solutions generated by AI can ease the work of designers when there is a need for repetitive tasks, such as making grids, presets or objects, compositional elements that could be introduced to the design of a product. In that way, AI can help designers create products faster, in ways that it couldn't be done by a single person before that.

Suggestions given by AI still need the support of designers, as the results are not always admirable or successful.

Designers will have to put some more effort to stand out from AI, to become even more creative, to develop a unique and impeccable style, acquire basic skills in several fields.

The attractiveness of the design of a printed product lies in its originality and unrepeatable creative diversity, in that way the collaboration of designers with AI can be a successful and fruitful one.

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