Testing AI Text to Image Generators for Advertising applications

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ABSTRACT:

Artificial Intelligence technology in advertising creativity now produces more creative and innovative visual aesthetics that leads to profitability increase of advertising campaign investments, improve customer relations, and personalization in the fastest way and shortest time with the least effort, in addition to improving efficiency, meeting marketing demand, reorganizing and upgrading traditional processes. Despite this tremendous development, the role of designer cannot be overlooked in the first place because of his different visions.

In light of the great crowding and creeping towards everything new in the world of artificial intelligence, it has become necessary for advertising designers to look carefully at the various technologies happening around, to help in various design fields, and to keep pace with the great development in the world of image due to the use of visual language in the first place in creating advertising content.

In this research, we will discuss the selection of the most famous artificial intelligence generators currently in the field of generating images from written text, and a unified text is entered into all generators, and then the outputs are deduced and compared between them so that we can help the advertising designer choose the best among them and expand horizons alongside with traditional authentic manual work.

This study helps understand and deduce the different outputs of artificial intelligence generators that converts written text into visual images and compare them together through some simple design elements, taking into consideration that the inputs and written text are constant in all generators.

Introduction:

Artificial intelligence in graphic design is one of the technological revolutions that changes the way designers work and interact with different projects. The use of artificial intelligence provides many important opportunities and improvements, as it saves time and effort, improves quality, creativity, and allows learning and developing new skills.

Even with the great development in different technologies, designers are able to adapt to art and design works. By using these advanced technologies, designers can reach new levels of creativity and efficiency. It is important to embrace this new technology and learn how to use it effectively to benefit from it in creative and innovative art works.

Designers must also be aware of the potential challenges that can arise when using artificial intelligence in graphic design. These include over-reliance on automated tools and neglecting human creative thinking. Therefore, designers should employ artificial intelligence as an assistant tool and not a complete substitute for manual creative work.

In the future, tools based on artificial intelligence will continue to develop, providing more opportunities to develop the graphic design process and expand the horizons of creativity. Thus, designers must stay up to date with new developments and innovations in this field and exploit them to enhance their skills, improve the quality of their work, and maximize the benefit of artificial intelligence in graphic design. (Samer, 2023).

The present study mainly tried to answer the subsequent questions:

Q1: How can Artificial Intelligence text to image techniques be useful in enriching modern advertising?

Q2: Do AI text to image generators have the same inventory and background from which they extract data and information?

Q3: Do AI generators process writings and convert them into images and give the same results?

This study aims to

1- Discover how does AI turn text into images.
2- Know from where do AI image generators get their data from.
3- Learn the algorithm behind AI image generator.
4- State what is the most accurate AI image generator.

This paper also pays attention to the generation of the awesome art using AI Text to Image generators, and suggests that artificial intelligence text to image generators can improve advertising quality by automating content creation, enhancing image precision and targeting the right audience, beside potentially increasing consumer engagement, though ethical considerations and consumer perceptions of AI-generated content as it must be managed carefully.

The best famous AI generators for converting written text into images have been used and selected, including, for example, generators such as, Imagen-3 AI, Picsart AI, Microsoft 356 AI, Pixlr AI, Adobe Firefly AI, Leaonardo.AI, ImagineArt AI, OpenArt AI, Runway AI and Flux AI.

Theoretical Framework:

What is the Text-to-Image AI process?

An AI text-to-image generator regularly makes utilize of a machine learning procedure called artificial neural networks that can get input in the shape of words, then it processes these words to create an image. The whole process takes few seconds, for the results of the work to come up immediately. (Hypotenuse AI, 2024)

AI-generated images should support and complement human creativity, not to replace it. AI tools are upgraded to enhance creative and marketing efforts, but continue to value and invest in human's ability. Collaboration between AI and human specialists can lead to imaginative and unique results. (inspiration agency, 2024).

The Rise of AI-Generated Art

AI-generated images are created using special calculations and algorithms that can create and produce visuals based on a set of input information that can range from abstract patterns to highly realistic representations of objects and humans. There are many numerous easy-to-use tools for creating AI-images such as DALL-E and Stable Diffusion which cruel that indeed those without a background in graphic design can create stunning visuals.

For marketers, this requires unique images and designs for social media posts and contents. AI contents can be generated in less than seconds. AI also can be used in creating unique new logos or brand imagery. AI generators can offer perpetual varieties, often at a fraction of the cost of hiring a human designer. (inspiration agency, 2024)

How does a text to image generator work?

The generators in question convert the input text into corresponding images, whether they be photographs or paintings. By employing text-to-image synthesis technology, these systems are able to create stunning images based on the description provided in the text.

How It Works: Step by Step

1. **Text Input Analysis:** This is one of the tasks where the AI starts from analyzing the text input given and written by the user. Firstly, the AI system analyzes the content and identifies the main components of the text that includes objects, scenes as well as feelings.
2. **Semantic Understanding:** Through the use of natural language processing (NLP) tools the AI system has a deep comprehension of the input content purposes and contexts. It understands how words and ideas relate in order to understand the meaning correctly.
3. **Visual Conceptualization:** Firstly, context is comprehended then the semantic data is interpreted within the context of the given requirements by the AI system, when imaging the description. It gives consideration to all factors including composition and light and the required angles of the pictures.
4. **Image Fusion:** In the most elementary form, using GANs or some other deep learning models, the AI system creates an image with those visual features that were previously selected. The user does not wait until the entire image is created but rather improves it bit by bit until images appear sufficiently realistic and coherent when integrating feedback from the discriminative models.
5. **Image Evaluation:** Prior to exposing the end user to the final image, the AI system has its own quality check mechanism, that evaluates the image from a set of predetermined measures. To enhance the overall final output, the system may also apply post processing methods and techniques such as image synthesis or transfiguration.
6. **Reasoning Audience Presentation:** Finally, the AI image generator output is availed to the user in form of either a final artifact or an image that may be part of other artistic or creative work. The user can give suggestions and revise the produced image thereby making advancement in the creative process. (Simplified, 2024)

Top Uses of AI Image Generators

The aim of this research parper is to present advancements in AI image generation tools in areas such as content, storytelling, design, and education. They perform an essential role to create relevant imagery that supports writing by content creators in order to encourage viewers. These however are only a fraction of the advantages that this technological advancement can offer.

1. Content Generation

Although in some instances AI images pose great challenges for copyright issues, they are without a doubt appropriate tool that allow creators from

different sectors to develop their brands and make content relevant such as blogs and social media posts. Most importantly there is great potential coupled with time and resources whilst still being consistent and delivering quality content.

2. Storytelling

The narrative performance by AI image generation tools is a powerful tool in the realm of imagery storytelling. They can literally bring to life the visuals for personas of an author, a film director, or a game developer. This technology will no doubt enhance the experience of reading or watching in a single story.

3. Design and Visualization

In design and art, the technologies can aim at producing actors or artists' concepts. There is tremendous power in AI art generation tools that could target the creation of new concepts or variations of designs which could potentially foster creativity.

4. Education and Training

It can be suggested that AI image generators could simplify how imagery works by enabling illustrations in the realm of education. It is argued that trainers and educators with the help of these technologies can emphasize descriptive imagery to support more complex portions of written or verbal content

5. Customization

With the help of AI image generators, content can be personalized even further by adapting visual aspects to individual preferences and interests. These tools allow for brands and businesses a much deeper personalization starting with users' product recommendations ending with user interfaces.

6. Inclusivity

Thanks to AI image generators, individuals suffering from different kinds of disabilities or special needs gap this issue by consuming visual content in a different way. Such approaches create text-draws where illustrations are based on the texts, which works on both textual and visual information making it easier to access the content for everyone.

7. Promotion, Marketing and Advertising

AI image generators give new wings to taking marketing and advertising to the next level by significantly altering how businesses engage their clients. These tools allow marketers to create unique ads, and also generate product images as aids in their quest to reach out and communicate using captivating visuals across all channels and media.

8. Data Visualization

Artificial Intelligence image generators open up new ways of presenting complex data sets and findings in the realms of data analysis and visualization. By translating numeric data and statistical results into graphical representations, these tools allow for a deep understanding of information and actionable insights for decision-makers to extract meaningful insight and make informed decisions.

9. Augmented Reality (AR) and Virtual Reality (VR)

These are important tools for helping developing AR and VR applications, creating believable virtual environments and objects. From demos of products coming alive in three dimensions to compelling story-telling experiences, they allow realistic simulatory worlds without crossing the boundaries between media. Opens up new opportunities in entertainment, education, and exploration.

10. Creative Expression

AI image "generators" are a medium for creative expression and experimentation. These tools can provide an unlimited amount of experimentation with new techniques, methods, and artistic concepts, igniting innovation and pushing boundaries even further. (Simplified, 2024)

The process of converting text to images

AI can create images from text through a process called Natural Language Processing (NLP). NLP uses machine learning algorithms to

analyze and interpret human language. AI algorithms such as Generative Antagonistic Networks (GANs), Variational Automatic Encoders (VAEs), and Deep Convolutional Networks (DCNs) can then use this processed language to create images, often referred to as "text-to-image synthesis."

These algorithms learn from a dataset of images and their associated texts, and use this information to create new images that match the description provided.

AI text-to-image generators work by taking a written description, generating it to an image based on the prompt provided. The process involves two neural networks working together to generate an image and analyze its compliance with the guidelines until the AI decides the accurate result.

Data Collection: AI models are trained on large datasets containing pairs of text descriptions and corresponding images. These datasets are essential for teaching the AI system to understand the relationships between words and visual content.

Text Encoding: The text description is first processed and encoded into a numerical format that the AI model can understand. This encoding often involves techniques like word embeddings or more advanced language models such as transformers.

Neural Network Architecture: The AI model typically consists of two main components: a generator and a discriminator.

Generator: This part of the network takes the encoded text as input and attempts to create an image that matches the written text description. It generates images based on the encoded information.

Discriminator: The discriminator is responsible for evaluating the generated images. It distinguishes between real images from the training dataset and the images created by the generator. Its goal is to provide feedback to the generator to improve the quality of the generated images.

Training Process (GANs): In a GAN-based approach, the generator and discriminator are trained simultaneously in a competitive way. The generator aims to produce images that can trick the discriminator into believing they are real, while the discriminator attempts to classify whether the image is real or correctly generated. This competitive training continues until the generator generates images that are difficult for the discriminator to distinguish from real images.

Image Generation: Once the AI model is trained, a text description can be given as input to the generator, and it will produce an image that matches the description as closely as possible.

Fine-tuning and Post-processing: Depending on the specific application, additional steps such as fine-tuning or post-processing can be applied to improve the quality and consistency of the generated images. (Kalpesh Kikani, 2023)

AI-generated images authenticity

AI-generated image generators use artificial neural networks trained to create images from scratch. These generators have the ability to create authentic, realistic images based on text input provided in natural language. (Altexsoft, 2023)

Restrictions of AI on Writing

Humans can recognize text symbols easily, regardless of the font used or whether it is in handwriting. There can be various forms in which texts can be produced in different contexts, and humans would understand how they are written to reach the meaning or to get completely away from the meaning. The extent of current AI image generators is void of this inbuilt understanding. They don't know the real meaning of text symbols.

These generators are artificial neural networks built after feeding tremendous image data to them, on which they "learn" the associations and make predictions. Therefore, accurate writing-adherence is required in description and narration to get the desired results (Seyedali Mirjalili, 2023)

The Importance of Data Collection for AI-Generated Images

To generate images with artificial intelligence, large amounts of data are very important because they are the bases from which these images are learned by AI and modeled accordingly. Also, these datasets contain images from different sources and determine their style, content, and the quality of the image produced. Proper data collection thus is a very important aspect in training artificial intelligence image generators and with edge consideration with accuracy and relevance of generated content.

Data Sources for AI Image Generators

Various sources are involved in collecting data for the purpose of generating AI images. Some of the common sources include:

- **Open-source images datasets**: These datasets are broad collections of images and use these in reference to other sources to train AI image generators.
- **Online image repositories**: Websites, social media networks, and other online sources are some of the many sources available to AI image generators that collect image training data.
- **Custom datasets**: Some AI image generators allow users to upload their own datasets or images to train the generator to create specialized specific images.

Techniques for Processing and Preprocessing Data

like data preprocessing before using, it for the training of AI image generators, this performs a similar task on data to be collected, ensuring that the data collected is pre-prepped for the best function. The preprocessing techniques used in it include the following:

- **Data cleaning**: Removing non correct, duplicated data, or irrelevant data from the dataset.
- **Data normalization:** Scaling or transformation of the data for normalizing data to power the AI image generator on a standard format for its functioning.
- **Data augmentation**: creating new images by addition of transformations: rotating, scaling, flipping, etc. (Matt Pogla. 2024)

Successful generative AI images creating

A good prompt contains specific descriptions.

- The specific image to be created should be understandable and clear.
- The written narrative text should include details about the subject, setting, mood, color scheme, and style. (Kayla LaPoure, 2024).

Some examples of AI Text-to-Image generators

The best famous AI generators for converting written text into images have been used and selected, including, for example, generators such as, Imagen-3, Picsart, Microsoft 356, Pixlr, Adobe Firefly, Leaonardo.AI, ImagineArt, Open Art, Runway and Flux AI.

1- Imagen-3 AI

Imagen 3 is our most sophisticated text-to-image model to date, capable of synthesizing images with even finer detail, richer lighting, and fewer distracting artefacts than any of its predecessors. Except that Imagen 3 accepts prompts written in plain, everyday language, which obviates the need for complex prompt engineering to obtain the desired output.

Figure (1): (DeepMind, 2024)

Prompt: Photographic portrait of a real-life dragon resting peacefully in a zoo, curled up next to its pet sheep. Symantec movie still, high quality DSLR photo

2- Picsart AI

Figure (2) : (Picsartai, 2024)

Prompt: Lion professional photo

3- Microsoft 356 AI

Figure (3) : (Microsoft Designer, 2024)

Prompt: A castle made out of gumdrops and lollipops on a pink background, 3D, hyper-surrealism, shiny, metallic, pastel colors.

4- Pixlr AI

Figure (4) : (AI Image Generator, 2024)

Prompt: "Out of the sea came he! And he shone bright, and on the right Went down into the sea" realistic

5- Adobe Firefly AI

Figure (5) : (Adobefirefly, 2024)

Prompt: Close-up of three hyper-realistic marbles with intense colors sliding down a silver patent leather rug, clear, vibrant colors, hyper realistic, digital art.

6- Leonardo.AI

Figure (6) : (Leonardo AI, 2024)

Prompt: Colorful print ad for chocolate bar, vintage style.

7- ImagineArt AI

Creates AI Art and turn imaginations into reality with Imagine's AI Art Generator and produce stunning visuals to cover up artistic thoughts.

Figure (7) : (imagine.art, 2024)

Prompt: Photo of a dog with headphones

8- OpenArt AI

Figure (8): (Openart.ai, 2024)

Prompt: long shot scenic professional photograph of {scenery}, perfect viewpoint, highly detailed, wide-angle lens, hyper realistic, with dramatic sky, polarizing filter, natural lighting, vivid colors, everything in sharp focus, HDR, UHD, 64K

9- Runway AI

Runway is an applied AI research company building the next era of art, entertainment and human creativity.

Figure (9) : (Runway, 2024)

Prompt: Cinematic shot, Greek temple, on the top of cliff, electric light smoke and wire phenomena's, biblical event, movie atheistic, super detailed, muted colours.

10- Flux AI

FLUX.1, developed by Flux AI, is a text-to-image AI model created by Black Forest Labs in 2024. It uses a technique called "flow matching" to generate detailed images from text descriptions. Users can experience FLUX.1 through the Flux AI Image Generator and optimize their prompts using the Flux Prompt Generator.

Lightning-Fast: Flux AI creates high-quality images in seconds, much faster than Stable Diffusion 3 or Midjourney. Unparalleled Quality: The advanced model of Flux AI produces more lifelike images with excellent details. Innovative Technology: The new technology is developed by Black Forest Labs, which is outstanding research in cutting-edge AI.

Figure (10) : (Fluxai, 2024)

Prompt: A charming image of a Bengal kitten, with its strikingly wild markings and green eyes, stalking a feather toy in the grass

Practical Framework:

Applied Models created by the researcher using the Text-to-Image Ai Generators in contribution with advertising:

The practical part will be divided into three parts.

1- **The first Experiment is the (Text AI Recognition)**
2- **The second Experiment is the (Logo AI Recognition)**
3- **The third Experiment is the (Image AI Recognition)**

The same input text will be installed in the AI generators that convert text to image and which were mentioned in the research text to extract results from the same text and the possibility of comparing these generators with each other. The researcher chose easy, understandable and concise words to use to be understandable in all AI Text-to-Image generators.

The first experiment: Text AI Recognition

The proposed prompt is: Word “light” made from various colorful feathers, black background”.

1- **The 1st applied example: Imagen-3 AI**
The researcher entered the required text, and the image was generated from the Imagen-3 AI generator as follows:

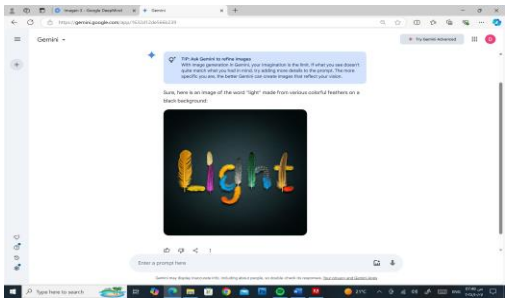


Figure (11): generated text result from Imagen-3 AI

2- **The 2nd applied example: Picsart AI**
The researcher entered the required text, and the image was generated from the Picsart AI generator as follows:

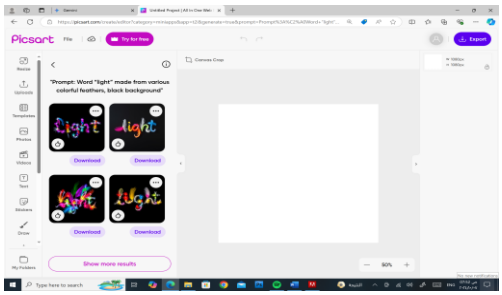


Figure (12): generated text result from Picsart AI

3- **The 3rd applied example: Microsoft 356 AI**
The researcher entered the required text, and the image was generated from the Microsoft 356 AI generator as follows:

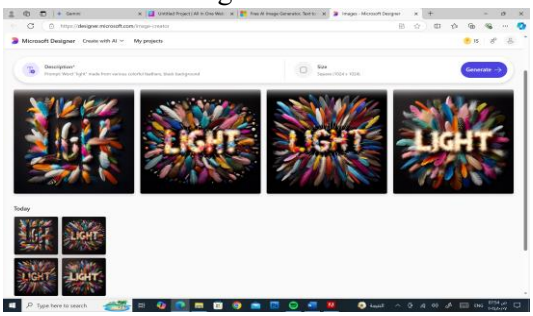


Figure (13): generated text result from Microsoft 356 AI

4- **The 4th applied example: Pixlr AI**
The researcher entered the required text, and the image was generated from the Pixlr AI generator as follows:

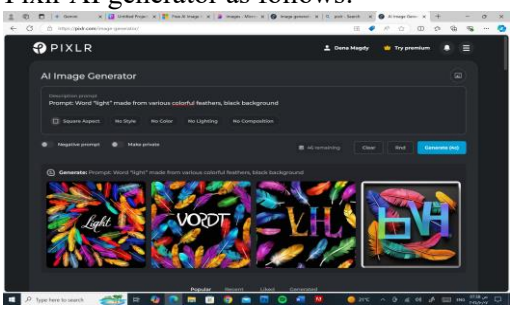


Figure (14): generated text result from Pixlr AI

5- The 5th applied example: Adobe Firefly AI

The researcher entered the required text, and the image was generated from the Adobe Firefly AI generator as follows:

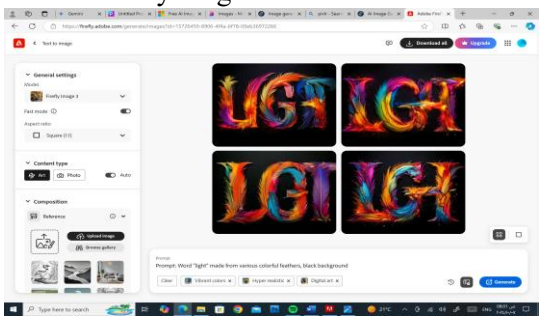


Figure (15): generated text result from Adobe Firefly AI

6- The 6th applied example: Leonardo.AI

The researcher entered the required text, and the image was generated from the Leonardo AI generator as follows:

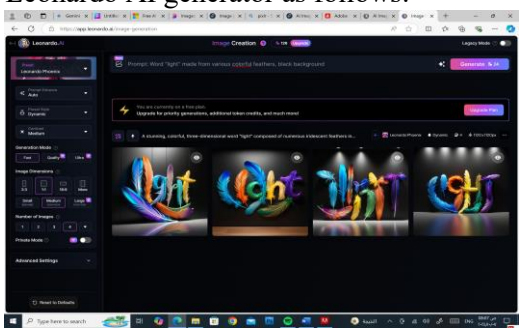


Figure (16): generated text result from Leonardo AI

7- The 7th applied example: ImagineArt AI

The researcher entered the required text, and the image was generated from the ImagineArt AI generator as follows:

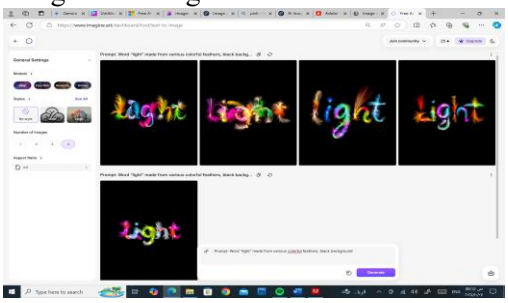


Figure (17): generated text result from ImagineArt AI

8- The 8th applied example: OpenArt AI

The researcher entered the required text, and the image was generated from the OpenArt AI generator as follows:

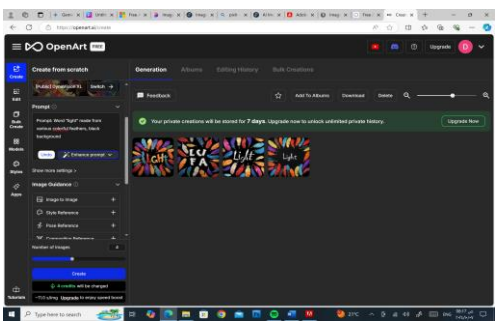


Figure (18): generated text result from OpenArt AI

9- The 9th applied example: Runway AI

The researcher entered the required text, and the image was generated from the Runway AI generator as follows:

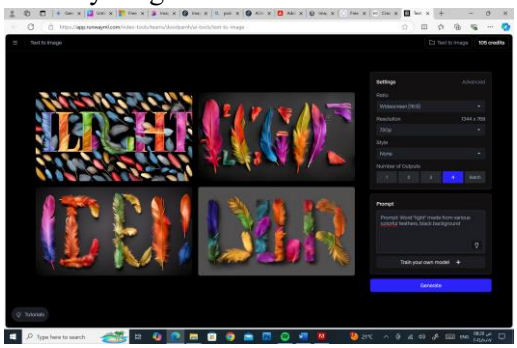


Figure (19): generated text result from Runway AI

10- The 10th applied example: Flux AI

The researcher entered the required text, and the image was generated from the Flux AI generator as follows:

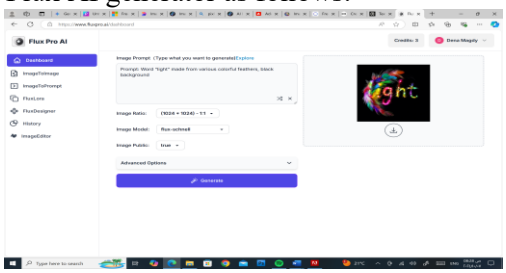


Figure (20): generated text result from Flux AI

Conclusion:

- In this first experiment of text AI recognition, It was found that there are some artificial intelligence generators that are able to write more accurately and correctly than other generators and are able to interpret the required word in the specific form written in the prompt, and the best of them in order are: Imagen-3 AI, Microsoft 356 AI, OpenArt AI, Picsart AI, ImagineArt AI, Leonardo AI, Flux AI, while the other generators didn't recognize the text correctly such as, Pixlr AI, Adobe Firefly AI, and Runway AI.

The second Experiment is the (Logo AI Recognition)

The proposed prompt is: "Create a visual representation of a unique and visually appealing logo that represents the essence of creativity and art design. Incorporate elements that convey the core values of the College of Applied Arts and inspire and encourage students to enroll."

1- The 1st applied example: Imagen-3 AI

The researcher entered the required text, and the image was generated from the Imagen-3 AI generator as follows:

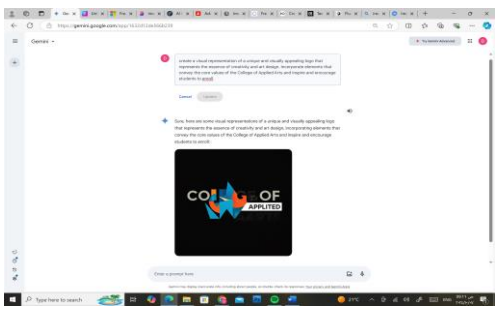


Figure (21): generated logo result from Imagen-3 AI

2- The 2nd applied example: Picsart AI

The researcher entered the required text, and the image was generated from the Picsart AI generator as follows:

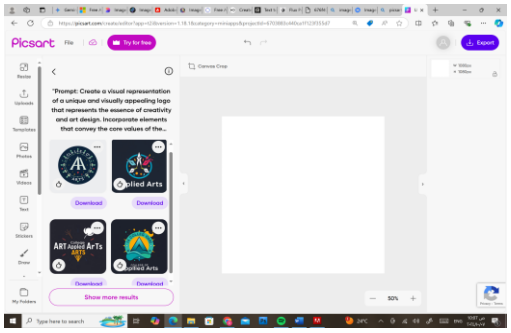


Figure (22): generated logo result from Picsart AI

3- The 3rd applied example: Microsoft 356 AI

The researcher entered the required text, and the image was generated from the Microsoft 356 AI generator as follows:

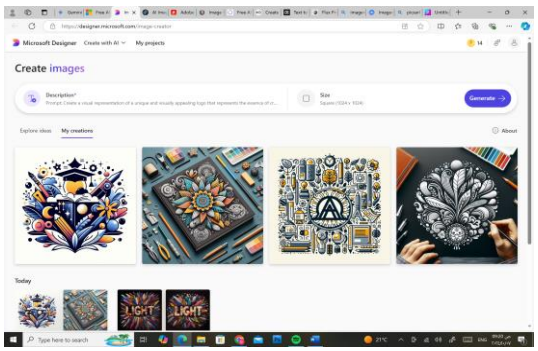


Figure (23): generated logo result from Microsoft 356 AI

4- The 4th applied example: Pixlr AI

The researcher entered the required text, and the image was generated from the Pixlr AI generator as follows:

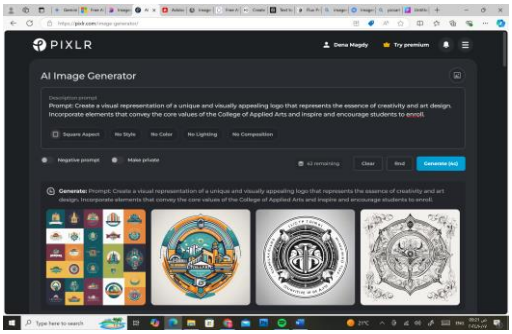


Figure (24): generated logo result from Pixlr AI

5- The 5th applied example: Adobe Firefly AI

The researcher entered the required text, and the image was generated from the Adobe Firefly AI generator as follows:

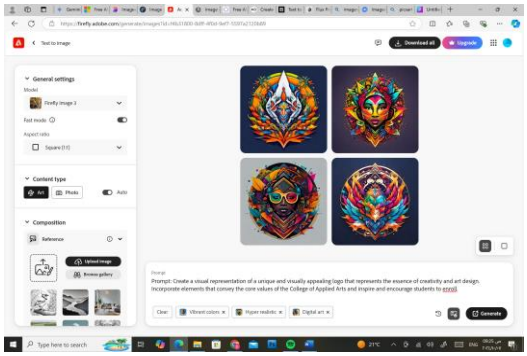


Figure (25): generated logo result from Adobe Firefly AI

6- The 6th applied example: Leonardo.AI

The researcher entered the required text, and the image was generated from the Leonardo AI generator as follows:

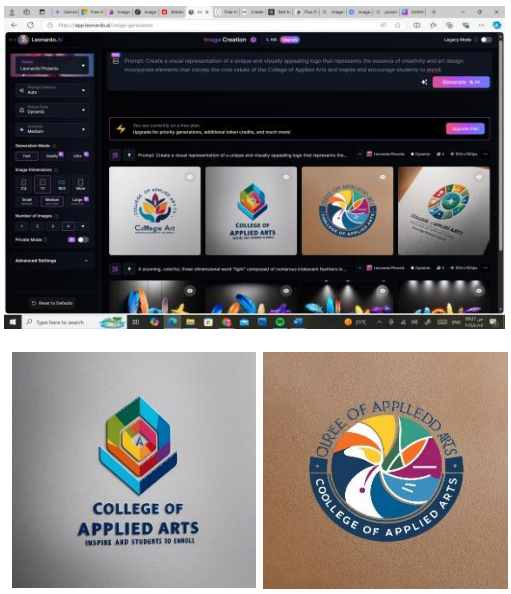


Figure (26): generated logo result from Leonardo AI

7- The 7th applied example: ImagineArt AI

The researcher entered the required text, and the image was generated from the ImagineArt AI generator as follows:

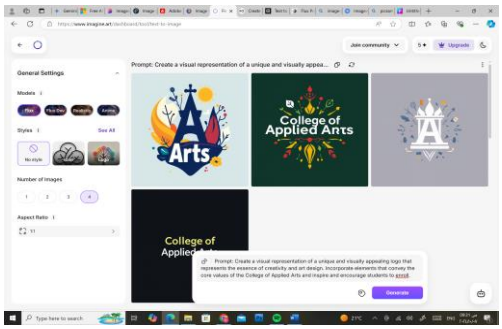


Figure (27): generated logo result from ImagineArt AI

8- The 8th applied example: OpenArt AI

The researcher entered the required text, and the image was generated from the OpenArt AI generator as follows:

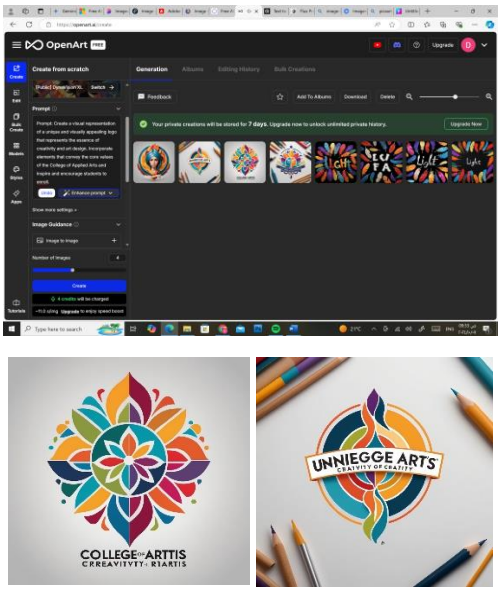


Figure (28): generated logo result from OpenArt AI

9- The 9th applied example: Runway AI

The researcher entered the required text, and the image was generated from the Runway AI generator as follows:

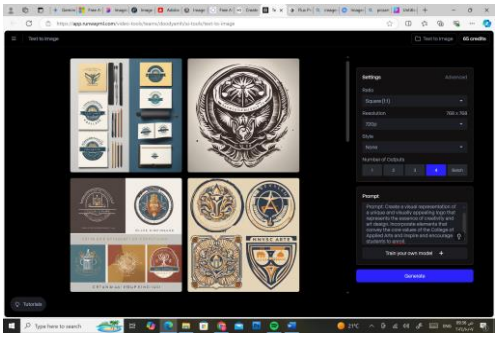
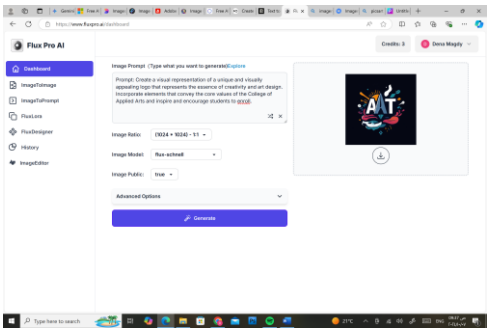


Figure (29): generated logo result from Runway AI

10- The 10th applied example: Flux AI

The researcher entered the required text, and the image was generated from the Flux AI generator as follows:



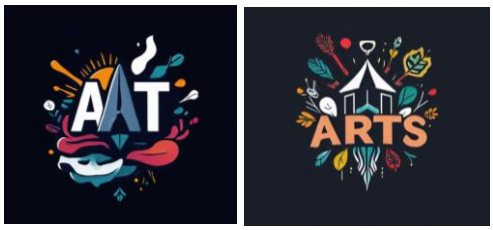


Figure (30): generated logo result from Flux AI

Conclusion:

- In this second experiment of Logo AI recognition, It was found that some artificial intelligence generators are able to create more accurate and correct logos than other generators and are able to interpret the required prompt in the specific form to obtain the clearest results, and the best of them in order are: Leonardo AI, OpenArt AI, Imagen-3 AI, Picsart AI, Pixlr AI , Runway AI, while the other generators made an artistic work for the logo using too much visual elements such as: Microsoft 356 AI, Pixlr AI, Adobe Firefly AI, ImaginArt AI, Flux AI.

The third Experiment is the (Image AI Recognition)

The proposed prompt is: "create a visual representation of "A floating perfume bottle with surreal elements with a dreamlike atmosphere."

1- The 1st applied example: Imagen-3 AI

The researcher entered the required text, and the image was generated from the Imagen-3 AI generator as follows:

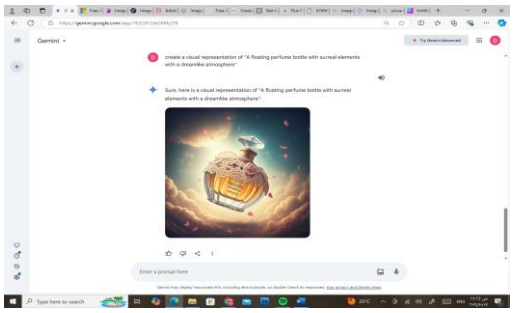


Figure (31): generated image result from Imagen-3 AI

2- The 2nd applied example: Picsart AI

The researcher entered the required text, and the image was generated from the Picsart AI generator as follows:

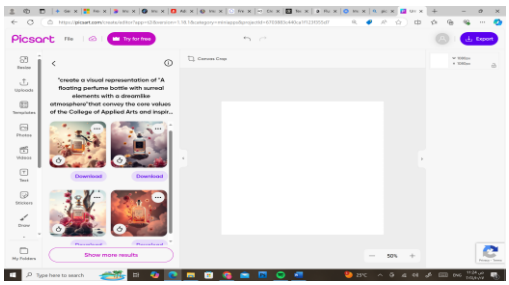


Figure (32): generated image result from Picsart AI

3- The 3rd applied example: Microsoft 356 AI

The researcher entered the required text, and the image was generated from the Microsoft 356 AI generator as follows:

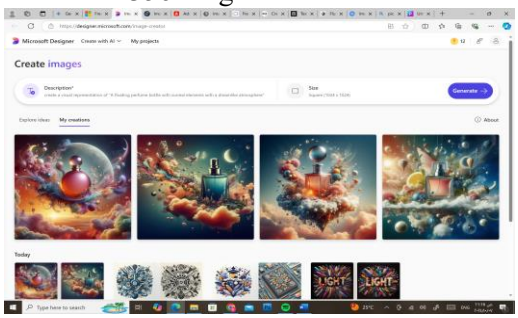


Figure (33): generated image result from Microsoft 356 AI

4- The 4th applied example: Pixlr AI

The researcher entered the required text, and the image was generated from the Pixlr AI generator as follows:

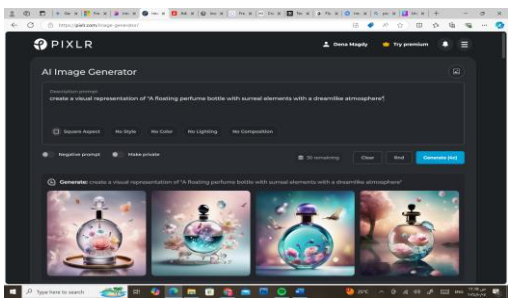


Figure (34): generated image result from Pixlr AI

5- The 5th applied example: Adobe Firefly AI

The researcher entered the required text, and the image was generated from the Adobe Firefly AI generator as follows:

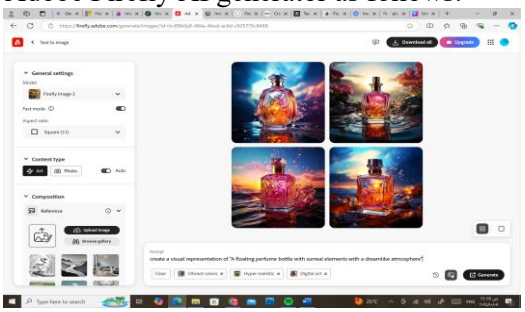


Figure (35): generated image result from Adobe Firefly AI

6- The 6th applied example: Leonardo.AI

The researcher entered the required text, and the image was generated from the Leonardo AI generator as follows:

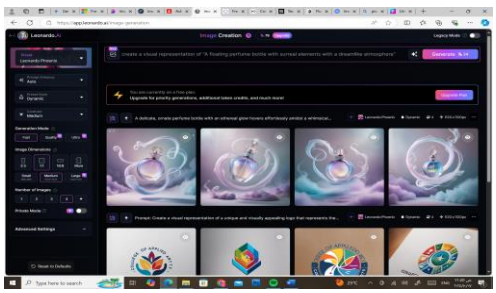


Figure (36): generated image result from Leonardo AI

7- The 7th applied example: ImagineArt AI

The researcher entered the required text, and the image was generated from the ImagineArt AI generator as follows:

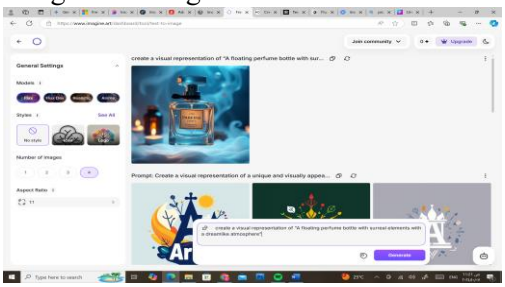


Figure (37): generated image result from ImagineArt AI

The 8th applied example: OpenArt AI

The researcher entered the required text, and the image was generated from the OpenArt AI generator as follows:

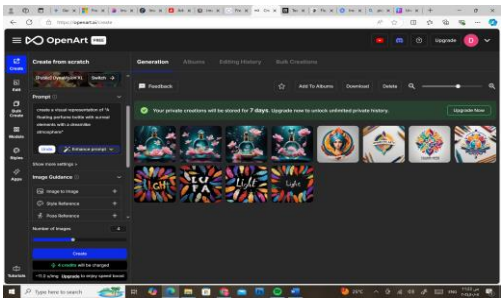


Figure (38): generated image result from OpenArt AI

8- The 9th applied example: Runway AI

The researcher entered the required text, and the image was generated from the Runway AI generator as follows:

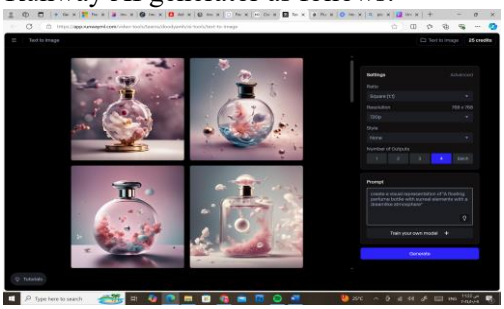


Figure (39): generated image result from Runway AI

9- The 10th applied example: Flux AI

The researcher entered the required text, and the image was generated from the Flux AI generator as follows:

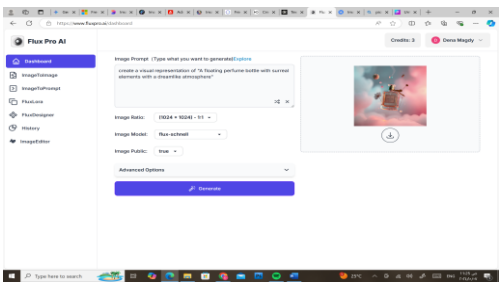


Figure (40): generated image result from Flux AI

Conclusion:

- In this third experiment of Image AI recognition, It was found that all artificial intelligence generators are able to create more than fascinating creative images, the AI generators created deferent images using deferent image contents, stunning backgrounds, some of them used slightly same colors, but generated the output in deferent processing ways. which helps a lot in advertising uses and advertising creativity besides the finishing of the designer and graphic design progress.

General Results:

From the different examples and experiments illustrated in the research, we can extract and conclude the following results:

1- Artificial intelligence using the different AI generators gives different and impressive results in all fields when entering the words that the designer wants to design, so that these generators produce many impressive design solutions in a very short time that is difficult for the designer to produce.

2- Design using artificial intelligence can produce many design solutions in all fields, including architecture, design, art, science fiction, anatomy, sculpture ... etc.

3- Design by these programs creates complete, wide and integrated scenes for the particular subject that is required to be designed, started with typography, backgrounds, and ending with advertising stationaries.

4- The designer must choose the appropriate AI generator for the topic he wants to design for, because the results may be different, and he must write a clear and accurate prompt to facilitate the creation process and give him the required accurate results.

General conclusion and discussion:

1- There are always and continuously many different technological alternatives on all levels, especially when the field is related to artificial intelligence, design and advertising. The designer and researcher must be familiar with everything new, especially in the field of modern technology.

2- Individual designers are indispensable because they are the ones who create creativity, even if not with their hands, but with the creativity of their minds, their inspiration, and their successful design experiences over the years of each designer's experience, because this appears in the final output of their design product.

3- Artificial intelligence techniques for creating and converting writings into new images are still developing at this moment, in addition to what these same generators also do in terms of other tasks such as erasing backgrounds, increasing the quality of images, modifying them, and converting drawings into innovative designs.

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