

A comparative analytical study of the use of artificial intelligence (AI) tools in generating various designs for women's clothing

Dr. Doaa Abdel Qader Al-Qatry

Assistant Professor, Department of Clothing and Textile, Faculty of Home Economics - Al-Azhar University

Dr. Asmaa Jalal Abu Rady

Assistant Professor, Department of Clothing and Textile, Faculty of Home Economics - Al-Azhar University

Abstract:

The idea of the research is to create a variety of designs for women's clothing by employing artificial intelligence (AI) tools used in generating images, where an inventory of AI tools was made, and through the survey study more than 40 tools of artificial intelligence that are used in Generating images from written texts, and the characteristics of these tools, the way they are used, and their capabilities to create and generate various designs for women's clothing through the written design text, have also been identified. This study shows the similarity of these tools in many characteristics and method of use, while they vary in the quality of the designs created. Through these tools and their compatibility with the written design text, and accordingly, three AI tools (Lexica - Dreamlike - Midjourney) were chosen to be the subject of the applied study, which resulted in the Midjourney tool being superior to the other two tools in terms of verifying the foundations and elements of design, and achieving The innovative and functional values of the new designs, in addition to the impact of the AI tool used on the characteristics of the new designs, so the Midjourney tool is the best In terms of its use in creating various designs for women's clothing, followed by the Lexica tool, and the Dreamlike tool comes in the last place.

Keywords :

Artificial Intelligence (AI), Artificial Intelligence tools, Generating Images, Women's Clothing

References :

- 1- Al-Hadi, Muhammad Muhammad. (2021). Artificial intelligence, its features and applications, and its developmental and societal impacts. The Egyptian Lebanese House for printing and publishing. Cairo.
- 2- Al-Halawani, Faten Farouk, Ashmael, Sondos Omar. (2022). The effectiveness of artificial intelligence to enrich the creative design of cartoon characters. International Journal of Artificial Intelligence in Education and Training. Technological and Human Development Association: 2 (1): 1-15.
- 3- Farghali, Zainab Abdel Hafeez (2021). Women's outerwear and home. I 1. Arab Thought House. Cairo.
- 4- Muhammad, Asmaa Al-Sayed, Muhammad, Karima Mahmoud. (2020). Artificial intelligence applications and the future of education technology. I 1. The Arab Group for Training and Publishing. Cairo.
- 5- Marei, Hisham Ahmed Ahmed. (2020). Applications of artificial intelligence in photography. International Design Journal. Scientific Society of Designers: 10(4): 75-86.
- 6- Nouredine, Ashraf Abdel Hakim, and others. (2008). Basics of men's outerwear design. World of books for printing, publishing and distribution. Cairo.
- 7- Intermediate Lexicon. (2011 AD). 5th edition. Arabic Language Complex. Cairo. Dehouche, N., & Dehouche, K. (2023). What is in a Text-to-Image Prompt: The Potential of Stable Diffusion in Visual Arts Education. arXiv preprint arXiv:2301.01902.
- 8- Dong, A., Li, Q., Mao, Q., & Tang, Y. (2019). Costume Expert Recommendation System Based on Physical Features. In Artificial Intelligence on Fashion and Textiles: Proceedings of the Artificial Intelligence on Fashion and Textiles (AIFT) Conference 2018, Hong Kong, July 3–6, 2018 (pp. 77-85). Springer International Publishing. Aihua Dong, Qin Li, Qingqing Mao and Yuxuan Tang. https://doi.org/10.1007/978-3-319-99695-0_10.
- 9- Kaplan J. (2016). Artificial intelligence: what everyone needs to know. Oxford University Press.
- 10- Russell S. J. & Norvig P. (2022). Artificial intelligence: a modern approach (4th ed.). Pearson.
- 11- Xu, T., Zhang, P., Huang, Q., Zhang, H., Gan, Z., Huang, X., & He, X. (2018). AttnGAN: Fine-grained text to image generation with attentional generative adversarial networks. In Proceedings of the IEEE conference on computer vision and pattern recognition (pp. 1316-1324).
- 12- Yang, T., Feng, J., Chen, J., Dong, C., Shi, Y., & Tao, R. (2019). A clothing recommendation system based on expert knowledge. In Artificial Intelligence on Fashion and Textiles: Proceedings of the Artificial Intelligence on Fashion and Textiles (AIFT) Conference 2018, Hong Kong, July 3–6, 2018 (pp. 1-7). Springer International Publishing. , https://doi.org/10.1007/978-3-319-99695-0_1
- 13- Zhu, J., Yang, Y., Cao, J., & Mei, E. C. F. (2019). New product design with popular fashion style discovery using machine learning. In Artificial Intelligence on Fashion and Textiles: Proceedings of the Artificial Intelligence on Fashion and Textiles (AIFT) Conference 2018, Hong Kong, July 3–6, 2018 (pp. 121-128). Springer International Publishing. https://doi.org/10.1007/978-3-319-99695-0_15.
- 14- <https://dreamlike.art/create>
- 15- <https://instantart.io/>
- 16- <https://jalammar.github.io/illustrated-stable-diffusion/>
- 17- <https://lexica.art/>
- 18- <https://midjourney.com/home/>

Citation: Doaa Al-Qatry & Asmaa Abo Rady (2023), A Comparative Analytical Study of the Use of Artificial Intelligence (AI) Tools in Generating Various Designs for Women's Clothing International Design Journal, Vol. 13 No. 2, (March 2023) pp 363-380

19- <https://nijijourney.com/en/>

20- <https://playgroundai.com/>

21- <https://www.craiyon.com/>

22- <https://www.futurepedia.io/ai-tools/image-generator>

Paper History:

Paper received 4th January 2023, Accepted 24th February 2023, Published 1st of March 2023