

A comparative analytical study of the use of artificial intelligence tools in creating feminine designs inspired by Egyptian folklore

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Abstract:

In line with Egypt's Vision 2030 and Egypt's strategy to achieve digital transformation, as well as to protect and promote heritage of all kinds and raise external and internal awareness of it within the objectives of the culture axis of the sustainable development strategy, the research idea came, which revolves around the application of artificial intelligence technology in creating designs inspired by Egyptian folklore. In the ever-evolving landscape of the fashion industry, the integration of artificial intelligence has emerged as a transformative force that reshapes traditional models of product development. This synergy between technology and fashion has led to the emergence of a new era, where data-driven insights, predictive analytics, and innovative applications of artificial intelligence are revolutionizing the way clothes are conceived, designed, and marketed. As well as the many ways in which advanced technologies are not only impacting, but also reshaping the creative and logistical aspects of an industry that thrives on innovation and trends. (techpacker.com)

Today's digital transformation has come to include a wide range of technologies, including applications and software, networking capabilities, artificial intelligence, machine learning, augmented and virtual reality, sensor technology, video-based analytics, cloud, and beyond. (presidency.eg) Hence, the role of artificial intelligence has emerged as an indispensable tool in the era of digital transformation that we live in today. It constitutes a fundamental pillar in the developments of the current era and is considered a pivotal element in the process of tremendous development, contributing to improving production efficiencies and the quality of services in various sectors. It also plays a crucial role in analyzing big data and enhancing innovation. (www.oracle.com) Artificial intelligence is a technological field capable of changing all aspects of life, as it contributes to producing new educational and learning solutions, and can increase human intelligence, providing insights, and improving productivity. Artificial intelligence is the new frontier of humanity that will create a different form of human civilization. Artificial intelligence is considered one of the most prominent computer technologies that have emerged from the information revolution and modern technology. It is based on a basic idea that makes machines think and perform tasks in a way like the thinking of an intelligent human being and the way he performs tasks.) Dasuki - 2020 AD) Artificial intelligence is also considered the most important output of the Fourth Industrial Revolution due to its multiple uses in many fields such as industrial, economic, technical and educational. Rather, it is expected that it will open the door to limitless innovations and lead to more industrial revolutions that will bring about a radical change in human life. Artificial intelligence will also be the engine of progress and prosperity in the coming few years, as it can, with the innovations that will follow, establish a new world that may seem like a fantasy. (Boubha-2022)

Research Problem Statement:

Considering the Fourth Industrial Revolution and the current development that has changed the features of the world, artificial intelligence has invaded all fields, which calls on us to keep pace with this development and study how to benefit from it in improving the performance of our work and its results to keep pace with this development and provide products that meet the needs and aspirations of humanity.

The research problem: 1- What is the possibility of benefiting from the application of artificial intelligence tools in creating designs for women inspired by Egyptian folklore? 2- What is the possibility of creating new clothing designs inspired by Egyptian folklore? 3- Can artificial intelligence outperform humans?

Research Objectives: The current research seeks to achieve the following objectives: 1- Benefit from the application of artificial intelligence tools in creating designs for women inspired by Egyptian folklore. 2- Highlighting the Egyptian identity and striving to revive the heritage through the proposed designs. 3- Regulating the role of artificial intelligence in reformulating and practicing the stages of the fashion and ready-to-wear design process. 4- Developing design processes for ready-to-wear clothes using artificial intelligence tools to increase alternatives to design ideas and reduce time and effort in design processes.

Research Significance: The importance of the research lies in the following points: 1- Identifying the latest

technological developments in the field of artificial intelligence 2- Shedding light on artificial intelligence tools and techniques in the field of clothing and fashion design. 3- Keeping pace with the global trend towards applied innovation using artificial intelligence applications. 4- Reviving Egyptian folklore and highlighting the Egyptian identity.

Research Methodology: This research follows the descriptive analytical approach and the applied approach in using artificial intelligence tools to create different designs for women and compare them to identify the advantages and disadvantages of these tools.

Research Hypothesis: • Studying the multiple capabilities of artificial intelligence in the field of fashion and ready-to-wear design contributes to enriching design trends in this field and is a supportive tool for the designer and increases the possibility of developing design education paths. • The research assumes that artificial intelligence will become an indispensable tool for the designer and cannot replace the designer himself. • Comparing artificial intelligence tools and highlighting the flaws allows the development of artificial intelligence programs and choosing the most appropriate ones in the field of fashion, and even adopting it as a future design tool

Results: 1- By studying the different tools for applying artificial intelligence in fashion design, the quality of the designs generated by the Imagine art and silk plm applications and their achievement of the innovative and aesthetic values of the new designs was demonstrated. 2- The study clarified the importance of applying artificial intelligence in developing the design and inspiration system for ready-made clothes in terms of supporting the designer and saving time and effort as well as the materials used in the design processes. 3- The study showed that it is possible to benefit from using artificial intelligence tools and applications in creating new designs inspired by Egyptian folklore that contribute to enriching the aesthetic value of the design. 4- The study concluded that designs can be created through a textual description of them or placing an image of an existing product using artificial intelligence. 5- Artificial intelligence can process a huge amount of data and information in a limited period. 6- There are defects that appeared in the use of some artificial intelligence tools that were unable to understand and absorb text inputs and were processed in another way that does not completely match the description. 7- One of the most important defects of using artificial intelligence platforms and applications is that they are not available for free to support the designer's needs on a permanent basis. 8- Artificial intelligence technologies contribute to the development and simplification of the design process, but they cannot be relied upon independently of the designer, but rather are used in integration with the designer. 9- Many of the new programs for design using artificial intelligence have not reached a stage where they can be relied upon as a primary source for design, but rather can be inspired and developed by the designer. 10- There are stages within the product development process in which artificial intelligence cannot be used, which require the designer's human sense to convey concepts related to emotion and cultural context to the user. 11- Linking the field of technology to the field of arts according to Egypt's Vision 2030.

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References:

- 1- Boubah, Souad: "Artificial Intelligence: Applications and Implications" - Journal of Economics of Finance and Business - Vol. 6 - No. 4 - 2022 AD.
- 2- Tawfiq, Salah El-Din Mohamed, and Fatima Salah El-Din Refaat Mohamed: "Artificial Intelligence: An Introduction to Enhancing Academic Excellence in Egyptian Universities": A Prospective Study - Educational Sciences Vol. 31-Issue 1-P1-63-2023.
- 3- Hajjaj, Mohamed Abdel Hamid Mohamed Fathy: "Using Artificial Intelligence Techniques in Creating Print Designs to Enrich the Aesthetic Value of Clothing Design" - Journal of Research in the Fields of Specific Education - Vol. 9-Issue 45-March 2023.
- 4- Hassanein, Magdoulin El-Sayed: "The Industrial Design Process in Light of Artificial Intelligence" - Journal of Architecture, Arts and Humanities - Special Issue - 2020.
- 5- Al-Haqqaan, Nada Mohamed: "Artificial Intelligence and Its Effectiveness in Developing Interior Design Skills" - Journal of Arts, Literature, Humanities and Social Sciences - No. 88-2023.
- 6- Khamis, Sonia: "Patterns of traditional women's outerwear and their accessories in the Tunisian Arab Republic" - "Sciences and Arts Journal - Studies and Research, Vol. 11, No. 4 - 1999 AD.

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- 7- Desouky, Hanan Fawzy Abu Al-Ela: "Psychological and social integration of people with special needs in light of artificial intelligence applications, a future vision" - Arab Journal of Disability and Talent Sciences - Arab League Educational, Scientific and Cultural Organization - Cairo - Issue 14 - pp. 619-630 - November 2020 AD.
 - 8- Zarouki, Riad, and Falta, Amira: "The role of artificial intelligence in improving the quality of higher education" - Arab Journal of Specific Education - Arab League Educational, Scientific and Cultural Organization - Vol. 4 - No. 12 - April 2020 AD.
 - 9- Suleiman, Hind Saleh: "Innovating designs inspired by Islamic art to enrich the aesthetic aspect of upholstery fabrics" - Journal of Arts and Applied Sciences - Vol. 6 - No. 3 - 2019.
 - 10- Ta'ima, Najla Muhammad Abdul Khaliq. Benefiting from the aesthetics of Jordanian heritage in developing evening wear designs using advanced embroidery methods. In the Fifth Annual Arab Scientific Conference - The Second International - Modern Trends in Developing Institutional and Academic Performance in Institutions of Qualitative Higher Education in Egypt and the Arab World Mansoura Faculty of Specific Education, Mansoura University, Vol. 4 - (2010)
 - 10- Abdel Ghaffar, Shahraban Jaber: "Folk Art: A Source of Inspiration for Designs that Emphasize the National Character." Educational and Social Studies - Vol. 9 - No. 4 - (2003)
 - 11- Abdel Qader, Iman Abdel Salam, Rabab Hassan Mohamed and Rawda Ahmed Ali: "The Role of Artificial Intelligence Applications in Fashion Design and Fashion Forecasting in the Ready-Made Garments Industry, an Analytical Study" - International Design Journal - Vol. 12 - No. 6 - 2022.
 - 12- Abdel Nabi, Duaa Hamed Hussein: "The Contribution of Artificial Intelligence to Glass Design and Production Processes: An Application to Perfume Packaging Design" - Journal of Architecture, Arts and Humanities - Vol. 9 - Special Issue - 2024.
 - 13- Al-Arifi, Tahani Mohamed Nasser: "The Possibility of Combining Artificial Intelligence Technology in Achieving the aesthetics of digital design - Journal of the College of Arts and Media - Issue 16 - 2023 AD.
 - 14- Al-Asiri, Issam bin Abdullah bin Ali and Dareen Abdul Rahman Hamid Al-Masoud: "The impact of artificial intelligence in the design of commercial display windows" - Journal of Arts, Literature, Humanities and Social Sciences - Issue 84 - 2022 AD.
 - 15- Qishta, Nabila Abdel Fattah: "The impact of artificial intelligence on the development of education systems - International Journal of Online Education - Society for Technological and Human Development - Issue 19 - Issue 1 - July 2020 AD.
 - 16- Al-Qatari, Duaa Abdul Qader Ibrahim, and Asmaa Jalal Abdul Aziz Abu Radi: "A comparative analytical study of the use of artificial intelligence tools AI in creating various designs for women's clothing" - International Journal of Design - Issue 13 - Issue 2 - 2023 AD.
 - 17- Muharab, Abdul Aziz Qasim: "Artificial Intelligence: Its Concept and Applications" - Journal of Money and Trade - Issue 652 - 2023 AD.
 - 18- Nasr, Mona Mohamed Sayed and Amina Abdel Gawad Abdel Baqi Imam: "A comparative analytical study between the designer's innovative thinking and the applications of artificial intelligence in the design of drama decor and costumes" - International Design Journal - Vol. 13-No. 6 - 2023 AD.
 - 19- Hilal, Faten Mahmoud Suleiman: "Principles of applying parametric design for innovative jewelry using artificial intelligence in the field of artistic works" - Journal of Arts, Literature, Humanities and Social Sciences - No. 100-2024 AD.
 - 20- Saudi Data and Artificial Intelligence Authority SDAIA - Artificial Intelligence for Executives - Riyadh - Saudi Arabia - March 2022 AD.
 - 21- [https://techpacker.com/blog/design/how-artificial-intelligence-is-revolutionizing-the-fashion-industry/\(9-5-2024\)](https://techpacker.com/blog/design/how-artificial-intelligence-is-revolutionizing-the-fashion-industry/(9-5-2024))
 - 22- [https://www.presidency.eg/ar/%D9%85%D8%B5%D8%B1/%D8%B1%D8%A4%D9%8A%D8%A9-%D9%85%D8%B5%D8%B1-2030/-\(10-9-2024\)](https://www.presidency.eg/ar/%D9%85%D8%B5%D8%B1/%D8%B1%D8%A4%D9%8A%D8%A9-%D9%85%D8%B5%D8%B1-2030/-(10-9-2024))
 - 24- [https://www.oracle.com/eg-ar/cloud/digital-transformation/-\(10-9-2024\)](https://www.oracle.com/eg-ar/cloud/digital-transformation/-(10-9-2024))
 - 25- UNESCO Education Sector (2019): Artificial Intelligence in Education: Challenges and Opportunities for Sustainable Development, the United Nations Educational, Scientific and Cultural Organization, pp1-48.
 - 23- [https://tengr.ai/en/easy?id=small-huge-ants-cry-noisily-\(9-25-2024\)](https://tengr.ai/en/easy?id=small-huge-ants-cry-noisily-(9-25-2024))
 - 24- [https://app.leonardo.ai/-\(9-23-2024\)](https://app.leonardo.ai/-(9-23-2024))

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- 25- <https://runwayml.com/>-(9-24-2024)
 - 26- <https://silkplm.com/>-(9-25-2024)
 - 27- https://www.freepik.com/designer/edit#from_element=creating-(9-25-2024)
 - 28- <https://ideogram.ai/t/explore>-(9-25-2024)
 - 29- <https://thenewblack.ai/>(9-25-2024)
 - 30- <https://www.fluxpro.ai/>9-21-2024)
 - 31- <https://www.imagine.art/dashboard>-(17-8-2024).

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