

## **How far does Artificial Intelligence (AI) evolve in the pursuit of Interior design as alternatives to traditional tools and their impact on the designer's function?**

**Dr. Mohamed Khaled Eed Ali Almajaibel**

Doctorate of Philosophy in Fine Arts, Decoration Department, Interior Architecture, Kuwait  
Dr.Almejaibel@gmail.com

### **Abstract:**

This era is described as the age of artificial intelligence. The age of research and modern discoveries, the age of scientific, technical and artistic creativity; where technology was considered an aesthetic creative trait. New artistic trends have emerged, architectural models based on the use of modern technology through the use of computer tools in the field of plastic arts in general and interior design in particular. The computer is a machine that can only form an artwork on its own after the artist's hand extends into the work, and the computer becomes a tool for expressing everything that is familiar in the real world in innovative ways. The potential performance has changed through the dynamic system of endless breeding to shape the artwork, resulting in a creative, innovative and sophisticated processing of computer design. The computer's productive capability; such as analysis, rhythm, repetition, change of shapes and size, light focus and adjusting its intensity, and the movement of elements and color techniques, helps to utilize the technological potential, helping to achieve the best aesthetic effects of the components of the design artwork. Thus, the designer was able to use the computer as a creative tool and a research and experimentation tool to discover all the potential it offers that can be adapted to serve design. The results therefore reflected the designer's ideas and identity and through it achieved the formative values. The multiple aesthetic systems of geometric and organic forms and the visual possibilities of color, line, space, texture and composition were utilized as well as the use of multiple means to serve design ideas, which are versatile and varied, while each design contains different expressive content. We must note that there is an important dimension in the practice of computer design, namely the aesthetic dimension. Computer-produced designs present qualities and characteristics of shapes, elements, colors, lines and contacts with special techniques. Using a computer in the design process is a tool that helps the designer complete work easier and faster. It also facilitates the first design planning process through data and information, storage, design modeling and understanding of the building's surroundings, as well as calculating the full costs and technical specifications required for the completion of construction and implementation work, termination and finishing, and transferring them to the designer to shorten time and facilitate implementation. The relationship between plastic art and modern technology has become one of the main pillars of design production. Digital cameras, laser discs, color separators and computers have taken a unique place and have contributed to opening up many areas to designers and creators.

### **Keywords:**

Artificial Intelligence, AI Algorithms, Virtual Reality VR, Augmented Reality, Metaverse

### **References:**

- 1- Somaya Eid Al-Zabut: Artificial Intelligence technology: an educational approach from the point of view of the literature and theories explaining artificial intelligence, the Twelfth International Scientific Conference: Innovative human, social and natural research, our vision for a prosperous economy and a better future by 2030, <http://arab.kmshare.net/> Istanbul, Turkey, July 29-30, 2021
- 2- Abdel Fattah, Hussein Ashraf, Essam Mohamed Qandil, Ahmed Anwar: Architecture and architectural design in the era of the digital revolution - scientific research published within the activities of the Ninth International Scientific Engineering Conference, Faculty of Engineering, Al-Azhar University. 2007
- 3- Mona Hassan Al-Masry: Developing architectural education to keep pace with globalization and the digital age, scientific research published within the activities of the conference on developing fine arts education in the face of globalization, Faculty of Fine Arts, Helwan University, 2001.
- 4- Ibrahim, Hazem: Reflections on Spaces, Alam Al-Binaa Magazine, Issue 26, 2011
- 5- Grace Khoury: Interior design, Dar Gabès for Printing, Publishing and Distribution, Beirut, Lebanon, 2009.
- 6- Abdel Ghafour Abdel Rasoul: Information technology and the future of education, Al-Alm newspaper article, Casablanca, Morocco, May 2004.
- 7- Muhammad Al-Sayed Al-Toukhi: Artificial Intelligence techniques and technological risks, a scientific journal issued by the Police Research Center, Sharjah Police General Command, Volume No. (30) Issue (116), January, United Arab Emirate
- 8- Maha Mamd Al-Sayed Ramadan: Interior design and virtual reality technology, scientific research published in the Journal of Globalization and Applied Arts, Faculty of Applied Arts, Damietta University, Volume Five, Issue Three, July 2018
- 9- Youmna Hamdy: Application of artificial intelligence in developing interior design operations management, scientific research published in the Journal of Design Sciences and Applied Arts, Part Three, Issue 2, June 2022.
- 10- Robert Gillam Scott. Basics of design. Translated by Muhammad Youssef. Dar Nahdet Misr, Cairo, 2000
- 11- Technical Information Dictionary: Free Enterprise Arabization Team, (Arabic and English), 2017
- 12- Unified Dictionary of Technology Terms, Unified Dictionary Series. Rabat, Arabization Coordination Office, 2011

- 13- Computer Dictionary, in Arabic and English, Third Edition, Arabic Language Academy in Cairo, 2003.
- 14- Rudner, L., & Liang, T. (2002). Automated essay scoring using Bayes' theorem. The Journal of Technology, Learning & Assessment, 1(2),
- 15- DiMartino, Michael Dante; Konietzko, Bryan (2006) "In Their Elements" Nickelodeon Magazine (Winter 2006): 6.
- 16- Chen, L., Chen, P., & Lin, Z. (2020). Artificial Intelligence in Education: A Review. Retrieved from Digital Object Identifier 10.1109/ACCESS.2020. https://creativecommons.org/licenses
- 17- HAL 90210 (28 Jan 2016" )No Go: Face book fails to spoil Google's big AI day ."The Guardian .. Archived from the original on 2017-08-14 .Retrieved.
- 18- Ian Goodfellow, Yoshua Bengio, and Aaron Courville (2016). Deep Learning. MIT Press. Online 27 January, 2023.
- 19- Meintjes, Keith"" .Generative Design" – What's That? - CIMdata ."Retrieved , August, 2023
- 20- Snow Crash by Neal Stephenson - Penguin Books Australia". 2022-01-13. Archived from the original on 13 January 2022. Retrieved 2022-01-13.
- 21- Di Cristina , Giuseppa , " AD - Architecture & Science" , Britain , Wiley Academy, 2001 .
- 22- Herbert W. Franke: Computer Graphics- Computer Art, Springer-Verlag, Briggs Heidelberg, New York, Tokyo, 1985.
- 23- Jones, JC. - Design methods- second edition. John Wiley & Sons, 1992,
- 24- Pine, B. J. (1993). Mass Customization: The New Frontier in Business Competition. Boston: Harvard Business School Press.
- 25- Picon, Antoine. Digital culture in architecture. Basel, Switzerland: Birkhauser (2017).
- 26- Russel, S., & Norvig, P. (2010). Artificial Intelligence: A modern approach. New Jersey: Pearson Education, Inc.
- 27- Sweeney, L. (2013). Discrimination in Online Ad Delivery. ACM Queue,
- 28- Terzidis, Kostas Expressive Form- A Conceptual Approach to Computational Design - Taylor & Francis e-Library, 2005.
- 29- Zenllner , Peter Hybrid Space ( New Forms In Digital Architecture Thames & Hudson, 2010,
- 30- Werner Dankwort 'C.' Weidlich 'Roland' Guenther 'Birgit' Blaurock 'Joerg E. (2004). "Engineers' CAX education, it's not only CAD". Computer-Aided Design. DOI:10.1016 /j.cad.2004.02.011.
- 31- MIT edu – bio. of Elting E. Morison ,New York Times obituary of Elting E. Morison
- 32- Ibtisam M. Farid The Future House B.SC – Faculty of Fine Arts , Alexandria University, 2004 .
- 33- https://arabits.com/ai/ai-basic-concepts/
- 34- https://ar.wikipedia.org/wiki/
- 35- https://albenaamag.com/2016/11/20/
- 36- https://ae.linkedin.com/pulse/hani-farrag
- 37- https://coreiten.com/article/%
- 38- https://beytk.net/artificial-intelligence-in-decoration/#google\_vignette
- 39- https://papers.cumincad.org/cgi-bin/works/2015%20+dave=2:/Show?1af4
- 40- http://akvis.com/it/coloriage-tutorial/interior.php(29-8-2008)
- 41- https://store.facebook.com/quest/products/quest-2/
- 42- https://cointelegraph.com/news/what-is-bloktopia-blok-and-how-does-it-work
- 43- https://kifwma.com/
- 44- https://technewsspace.com/facebook-demonstrated-the-work-of-the-first-version-of-the-metaverse-the-virtual-environment-of-horizon-workrooms/
- 45- https://cnn-arabic-images.cnn.io/cloudinary/image/upload/w\_auto/cnnarabic/2022
- 46- https://www.albayan.ae/five-senses/east-and-west/2014-06-02-1.2136619
- 47- https://www.floornature.com/marcos-novak-5052/
- 48- https://www.wayfaring.info/2009/07/24/cocoon-club-frankfurt/
- 49- https://www.designingbuildings.co.uk/wiki/Principles\_of\_enclosure
- 50- https://www.aldar2030.com/4141-doc
- 51- https://www.albawaba.net/ar -1479632?expand\_article=1
- 52- https://www.dezeen.com/2022/02/01/roar-meta-space-studio-designing-property-metaverse-news/03/26/images/.web

## ***Paper History:***

**Paper received September 20, 2023, Accepted November 15, 2023, Published on line January 1, 2024**