Using Artificial Intelligence Applications to Create Contemporary Heritage Designs to Enrich Typography to Preserve Saudi Heritage

Naglaa Muhammad Farouk Ahmed[1], L. M. Elwakeel[2], Ali Abdullah Marzuk[3], Mostafa Mohamed Abdulaziz[4]

Abstract

Artificial intelligence is part of the environmental communication system of digital technology. The shift to digital technology and the development of information and communication technologies have become among the reasons that led to the creation of an ecosystem composed of digital technologies. The digital transformation of the printing industry affects its ability to produce and use data that has not been It was not possible technically or financially before, and the research problem is defined in how artificial intelligence applications can be used to create contemporary heritage designs to enrich typography to preserve heritage. The research is based on achieving three main entrances, which are the entrance to the study of the concept of artificial intelligence and its applications, the entrance to how to make contemporary designs from the Saudi heritage, and the entrance concerned with the implementation of innovative typographical commentaries by linking them to preserve the heritage. Through these entrances, the concept of artificial intelligence and the various plastic capabilities of this technology were clarified. And learn about the applications of artificial intelligence and its importance in the field of art in general and the field of printing in particular. The research followed the descriptive, analytical and experimental approach. Accordingly, we have made seven designs that are suitable for use in typographic pendants inspired by Saudi folk art, but they were processed using the artificial intelligence system, which is one of the most important modern design methods and sources that are used to enrich works of art. It is the most important of our findings.

Keywords: *Using Artificial Intelligence Applications - to Create Contemporary Heritage Designs - to Enrich the Printed Plate and Preserve Heritage.*

The Introduction

Scientists use artificial intelligence to more efficiently accomplish tasks previously performed manually, communicate with customers, identify patterns, and solve problems. When using artificial intelligence, developers must have a background and information in mathematics. Artificial intelligence can develop and enhance human efforts in various fields. Contrary to the common belief that artificial intelligence is limited only to robots that have a mind of their own, it has now become This advanced technology is used to shorten and simplify the various processes of collecting and analyzing large amounts of irregular data and information in order to identify and understand the patterns contained in this information and data, thus completing various tasks efficiently and with high quality.

Artificial intelligence is known to help machines perform tasks that only a human mind capable of

[1]Associate Professor at the College of Culture and Arts, Department of Home Economics - College of Culture and Arts- Abha - King Khalid University, P.O. Box 3236. Abha. Email: nalsaied@kku.edu.sa
[2] Department of Home Economics, Faculty of Science and Arts in Tihama, King Khalid University, Muhayil Asir 61913, Saudi Arabia. Email: lalwakel@kku.edu.sa
[3]Department of History and Archaeology- College of Arts and Humanities- King Khalid University. Email: Marzuk@kku.edu.sa
[4]Department of Art Education Sciences- College of Art Education- Helwan University - Cairo- Egypt-P.O.Box 11918. Email: drmostafama@hotmail.com

identifying, understanding, analyzing, and deducing can perform. In other words, artificial intelligence knows the behavior and characteristics that characterize computer programs. It simulates the capabilities of the human mind and its modes of operation, such as the ability to understand, learn, infer, react, and give a result on situations and conditions for which the machine was not programmed directly. That is, it is a system that understands its environment and uses situations that increase His chance to succeed in achieving his mission.

Just as artificial intelligence helps do things faster and better, in all fields, artists have used artificial intelligence in implementing various creative artistic works since ancient times via computers as auxiliary tools in producing artistic works.

The artist uses and invests his tools using artificial intelligence, to produce new models of art that add a new dimension to his work, thinking, and interests, allowing for the flexibility of the tools and applications available to him. Artists have begun to feel this in their daily and direct contact with software and tools that operate with artificial intelligence techniques, as it is an additional creative tool under... their behavior, A tool they can deal with, understand and cooperate with, and which will recycle their ideas and artistic works with their own characteristics and styles and in different ways to push the boundaries of artistic production and imagination to their maximum levels.Artificial intelligence also applies to the field of textile printing, through quickly creating several contemporary designs that are suitable for use in printing techniques to create innovative printing labels, which saves effort and time in implementing printing labels. Artificial intelligence has also influenced the development of advanced algorithms that gradually replace the traditional methods by which artistic designs are processed, allowing the immediate processing of units, repairing their defects, and improving them automatically that does not require any effort, to reach amazing results that would have required the artist to sit for a long time to produce them. In this study, the focus was on using artificial intelligence applications to create contemporary heritage designs to enrich printing works to preserve Saudi heritage. Artificial intelligence applications are characterized by saving cost, time and effort to create contemporary designs related to Saudi heritage using different printing techniques. These programs also help the artist to use... Colors are used in complete freedom, which makes it achieve a richness of color and texture. This method represents a new addition to the field of hand printing, with which one can move away from the familiar traditional images and relationships of printing to the new, divergent thought and freedom of printing formation in various print performance methods, print media, The materials range from the narrow limits of dealing with printing methods to the fluency and flexibility of artistic composition. Experimentation in the field of printing is considered one of the important foundations for gaining technical and artistic experience.

Through the exploratory study carried out by the current research on printed works of art, similarities were found in the designs. Therefore, a search was made for new sources of visions that could present new, innovative designs that are different from what is present in printed works.

Working to find something new in printed designs will increase the creative process in design. Design gains its beauty and attractiveness from two important elements: the first is the units that make up the design and the second is the colors. This study aims to give a clear picture of the various plastic possibilities for artificial intelligence applications to achieve contemporary designs that enrich printing work and achieve the distinguished aesthetic aspect. By addressing several basic axes, they are the focus of possibilities. Multiple applications of artificial intelligence, the axis of contemporary heritage designs to enrich printing pendants, and the axis of preserving Saudi heritage and linking them. They were both employed using the experimental descriptive approach to create contemporary artistic designs that enrich print pendants.

Research Problem

Due to the scarcity of academic studies that have dealt with this topic, which requires more specialized research in this field, the research problem is determined in the following question:

-How can artificial intelligence applications be used to create contemporary heritage designs to enrich typographic works to preserve Saudi heritage?

Research Importance

The importance of the research is due to:

• Shedding light on artificial intelligence, its applications, and its advantages in the field of fine arts.
• Keeping pace with the global trend towards applied innovation through the use of artificial intelligence applications.
• Promoting research in the field of artificial intelligence in creating designs suitable for printing posters due to their scarcity in this field.
•Keeping up with the digital transformation of operating system mechanisms in printing factories.
• Identifying modern approaches to formulating contemporary Saudi popular vocabulary enriches printing work.
• Revealing the role of the plate in stimulating tourism and preserving Saudi folklore.
•Finding new experimental solutions through the use of artificial intelligence applications to create contemporary heritage designs to enrich printing works to preserve Saudi heritage.

Research Objectives

The Research Objectives to

• Identifying the different capabilities of artificial intelligence technology, its various methods and algorithms, and its applications in various practical aspects.
• Creating contemporary designs suitable for printing posters, giving them an aesthetic aspect using artificial intelligence systems.
•Using artificial intelligence applications to create Saudi heritage designs to preserve heritage.
•Integration between art and design so that new designs can be predicted that keep pace with contemporary trends in world art.

Research Hypotheses

Artificial intelligence applications can be used to create contemporary heritage designs to enrich typographic works to preserve Saudi heritage.

Research Terminology

Artificial Intelligence

It is the field of computer science that looks at the logic behind human intelligence. This field searches for a way to understand how we think and recreate this intelligence in machines. Due to its nature, artificial intelligence extends across human activities, which makes it relevant in different ways to every industry (Leanne Luce, 2019-3) .

Heritage

Heritage is the summary of what previous generations left behind for current generations in order to serve as an example from the past and an approach from which children draw lessons to pass from the present to the future. Heritage in civilization is like the roots in a tree. The more the roots sink and

branch, the stronger, more stable and more capable the tree becomes of facing the vicissitudes of time. From a scientific standpoint, it is a stand-alone cultural science that specializes in a specific sector of culture (traditional or popular culture) and sheds light on it from historical, geographical, social and psychological angles.

Research Methodology

The Research Follows the Experimental Descriptive Method

• **The descriptive approach:** studying the meaning of artificial intelligence, its applications, its uses in fine art, and its importance to art.

• **Experimental approach:** This is done by conducting experiments using artificial intelligence applications to create contemporary heritage designs to enrich typographic works to preserve Saudi heritage.

Research Delimitations

Spatial Delimitations: This research was carried out in the Kingdom of Saudi Arabia

Objective Delimitations

• The study is limited to using artificial intelligence applications to create contemporary heritage designs to enrich typographic works to preserve Saudi heritage.

• Units derived from various Saudi heritage.
• Printing on cotton canvas.

•The Research Sample

The research was limited to implementing some of the innovative designs using artificial intelligence applications to create contemporary heritage designs to enrich printing works to preserve Saudi heritage.

•Search Tools

Artificial intelligence applications that are suitable for creating various artistic designs

Canvas to print on

Revious Studies

First: Studies of the first axis: artificial intelligence

A study by Hisham Ahmed Ahmed (2017) entitled (Applications of artificial intelligence in photography)

Which aimed to identify the enormous potential granted by artificial intelligence applications in photography, the extent of its rapid development, and how to maximize the use of it to obtain better photographic images with the least time and effort, whether in the photography stage or in the stage of processing and improving images and fixing their defects, as well as in generating And creating photographs of subjects that do not exist in reality. And to obtain results from them, artificial intelligence algorithms are used in light measurement systems in digital cameras to analyze the data of reflected light from parts of the scene and compare it with a database containing tens of thousands of professional images to find out how similar this scene is to Any of these images, then the camera determines the settings that lead to obtaining the best exposure for this scene.

•Study (Samah Haroun Abdel Salam) (2017): entitled (Aesthetics of augmented reality as a new means of creative artistic expression). The study aimed to re-evaluate the possibilities of augmented reality for artistic expression in the current era and the ability to generate new ways of perceiving the recipient or

user, and to shed light on the user's duality in interpretation as a main feature of augmented reality art. The study also discusses the implications of the future use of augmented reality in art, including the possibilities and problems for continuing creativity. Technical expertise in this field, including visual space, sensory and interactive methods. This study is useful in identifying the types of artificial intelligence and its qualification for art.

•Study (Samar Ziyara Matroud Al-Bahadli) (2013): entitled (Study of technological methods for custom-made design in the ready-made clothing sector), which aimed to know the technological methods for designing and manufacturing clothing according to consumers' requirements and needs, developing their personal tastes, and presenting successful international companies in the use of design technology. According to demand and its application, the results were reached, including that there are no fundamental differences in acceptance of custom-design technology between the genders, and that the percentage of females is higher by a slight difference. The age group between 18-25 constituted the high percentages that wish to use custom-design technology.

•A study by (Mohamed Madahi (2022)), entitled (Impacts of applications of the Fourth Industrial Revolution - artificial intelligence - on the economies of the Arab countries): The study aimed to present a deep learning model for automatically generating radiological reports based on chest X-rays or mammograms, as it was used in Marketing field .

•A study by (Mohamed Mohieddin Mahmoud (2008 AD), entitled (Study of artificial intelligence technology and the role of the industrial designer in its •applications in the field of smart products): which aimed to know and establish the possibility of using artificial intelligence technology and to contribute to raising the design ability of the industrial designer, which helps in creating... And creating modern products. The results concluded that the use of artificial intelligence reduces the time and cost in completing models.

•Study (Ahmed Mahmoud Abda Al-Sheikh: 2016) The title of the study is (Application of artificial intelligence in designing fabrics for women's clothing). The study aimed to create designs suitable for fabrics for women's clothing using artificial intelligence systems, and integration between art and design, where new designs that keep pace with international fashion trends can be predicted. Artificial intelligence systems have been identified as one of the most important modern design sources used to enrich women's clothing fabric designs.

•Study (Shaima Ahmed Muhammad Kamel (2019 AD)): Title of the study (Utilizing virtual reality technology for engineering manufacturing systems in developing the level of production performance in ready-made clothing factories) aims to plan the design of production lines and benefit from modern systems for understanding time and movement when planning production lines. And the application of virtual reality in designing lines and optimal exploitation of machines and human resources, which leads to reducing production costs. Some of the results showed the effectiveness of the program in developing performance in ready-made clothing factories in Egypt.

Second: Special Studies on Saudi Heritage

•Study (Maha bint Abdullah Al-Sinan: 2001 AD) The title of the study is (The impact of cultural heritage on the artistic vision in contemporary Saudi fine art painting, and the role of women in this field). The study aimed to study the cultural heritage of the Kingdom of Saudi Arabia as a major influence on the distinction of the artistic vision of fine art painting. Contemporary art in the Kingdom, and among the results of the study was that fine photography is linked to the human civilizational, artistic and cultural heritage and the value associated with religion and society, the political, economic and social conditions and the geography of the place, the geographical and cultural diversity of the Kingdom and openness to

other cultures, which gave the cultural heritage a richness that enriches the vision of the fine photographer and contributes to the diversity And enriching contemporary pictorial production.

•A study (Mais bin Ayed Al-Qahtani: 2003), entitled (The extent of the effectiveness of the activities and contributions of Al-Muftaha village on plastic art): The study aimed to know the impact of the village on society through preserving traditional crafts and paying attention to courses to prepare talented people in the region, and one of the results of the study was There is a clear and direct impact of the surrounding environment of Al-Muftahah on the works that were produced in it, and also from the results of the study it was shown that residence in the village studio increases the artist's productivity. The study may benefit the current research in identifying the traditional artistic features of the village with its Asiri architectural style and the crafts and arts it contains, and the existing ceremonies. It contains exhibitions, all of which are important aspects of attracting tourists, which has made the village an important tourist place frequented by most visitors to the region in general and artists in particular. The study may benefit the current research in identifying the features and vocabulary of popular heritage, its types, and the various plastic values associated with it.

Procedural Steps for Research

First: The Theoretical Framework: It Includes

• Study the meaning of artificial intelligence and its importance.
• Study various artificial intelligence applications that are suitable for creating contemporary designs.
• Study of Saudi heritage and types of heritage.
• Study units related to Saudi heritage
•Identify the manual printing techniques that serve the current research.

Second: Practical Framework

•By benefiting from the results of the study in the theoretical framework
• Experimental practices carried out by research, to use artificial intelligence •applications to create contemporary heritage designs to enrich typographic works to preserve Saudi heritage.
• Using digital printing art technology and artificial intelligence applications (basic technology).
• Using additional manual printing techniques that serve the artwork (additional technique).
  ••Adding variables such as transparent, opaque and dyed fabric printing colors (pigment)، and color value variables.
• Implementing and employing these applied experiments in contemporary printing works to achieve artistic and aesthetic goals.
• Description and analysis of works of art.
• Create a questionnaire form to evaluate the designs proposed in the research by specialized professors using statistical analysis in the SPSS program.

Presenting results and recommendations in light of the research finding

First: the Theoretical Framework

Art Techniques in Artificial Intelligence

Among the most important technologies used in this field, which are considered the longest lasting in artificial intelligence research, are:

Artificial Neural Networks

These are computational techniques that mimic the way the human brain works, through huge processors consisting of simple processing units called nodes or neurons. This interconnection between

neurons gives them the ability to store information, sound, images, etc., and then also allows them to learn through repetition and error. (Ahmed Mahmoud Abda Al-Sheikh, 2016)

Generative Adversarial Retinas

Or what is known as "Generative adversarial network," which is the technology that was used in producing the painting "Edmond de Bellamy," which was sold at Christie's auction in New York. The generative adversarial network consists of two components: (a generative network and a discriminative network) based on a matrix of random numbers. The generative network creates a new image through a number of transformations, while the role of the discriminative network is to distinguish between real images and fabricated images produced by the generative network, Rayan, Adel Attia (2013 AD). Today, there are many applications that are artificially programmed through mathematical patterns and complex algorithms to mimic the method of drawing, brush strokes, and actual painting movements performed by real painters; Among the many examples of these applications are "Stable Devusion" and "StyleGAN" (Midjourney). By entering specific words to these artificial intelligence applications, anyone can express the nature of the artwork they desire. To obtain a work of art, a drawing, or a design in the way he wishes.

The Artist by Harold Cohen

The beginning of the use of artificial intelligence in the world of visual arts dates back to the British artist Harold Cohen (May 1, 1928 - April 27, 2016), who designed a computer application - called "AARON" - consisting of several programs combined; He can produce artistic forms independently of any human intervention.

Cohen developed the Aaron app with the goal of extracting abstract art forms and symbols like those drawn by Neanderthals. Indeed, he succeeded in creating simple black and white drawings, but they were very primitive for Cohen, so he later completed drawing them with his own hand, and they were displayed in international museums, including the TATE in London, as in Figure No. (1). The pinnacle of the program's success was the use of special brushes and pigments chosen by the program itself without Cohen's intercession. Cohen's idea and the resulting work at the intersection of computing, artificial intelligence, and art have attracted a great deal of attention. Today, he is considered a pioneer in the use of artificial intelligence in the production of fine arts.

Figure No. (1): British Artist Harold Cohen, Pioneer of Using Artificial Intelligence to Produce Visual Arts (Social Networking Sites).

Today, works of art produced by artificial intelligence applications compete in global auctions with other works produced by humans. The most famous example of this is the portrait of Edmond de Bellamy.

The artwork is a blurry painting representing a man wearing a black shirt and a white collar, and it belongs to a series of images produced by artificial intelligence called (La Famille de Belamy), which is borrowed from the word "bel ami", which means good friend in French. The painting was sold. At Christie's Auction House in New York, it fetched $432,000 in 2018, even though it was estimated at just $10,000 before the sale.

As the first work of art produced by artificial intelligence that was sold at public auction, knowing that it is by an unknown artist who has not been heard of before. This painting was produced by an algorithm (or mathematical system), as in Figure No. (2).

Figure No. (2): Portrait of Edmund De Bellamy (Social Networking Sites).

The Fifth International Exhibition of Arts and Sciences in Beijing witnessed the display of more than 120 works of art, created by about 200 artists from more than 20 countries. These works demonstrated the artists' diverse explorations of the field of artificial intelligence, including themes such as collaborative innovation of technology and art, the limits of human perception, and the artistic model of technological innovation.

Folklore

Folklore is the collection of ancient arts, myths, tales, stories, material culture, and plastic arts confined within the customs and traditions of a specific population group in a country. Customs and traditions related to folklore are transmitted from one generation to another, often through oral narration, and each generation may add new things. Or deleting things to fit in the end with the reality of his life. This creativity is not the work of an individual, but rather the product of the human group as a whole in a given society. It also means heritage, which is what is transmitted in terms of traditions, customs, literature, arts, sciences, and the like from one generation to the next. We say: "folk heritage," literary heritage, "human heritage," and it includes all the arts and popular traditions, such as music, poetry, singing, stories, tales, and popular beliefs. There are proverbs on the tongues of the common people, various occasions and marriage customs, and the inherited methods of performance, forms, colors of games, dancing, and skills they contain.

The Importance of Heritage

There is great importance to heritage, including the following:

-Heritage contributes to strengthening and reviving the economy, especially local economies that have shown the importance of heritage, especially for tourists from outside the country. Heritage also helps

increase foreign exchange circulation, increase development rates in the country, and increase training experiences, which contribute to enhancing economic and social development.

-Heritage occupies an important place in our lives, because of its amazing link in increasing social cohesion and helping to promote peace among all, through its role in enhancing trust and common knowledge. UNESCO also recognizes the importance of increasing awareness about heritage, and establishing agencies and institutions that increase Awareness among people of the importance of heritage in order to preserve it, and it also encourages researchers and scholars from different regions to explore the history of buried heritage.

-Heritage contributes to strengthening the links between the past, present and future. It also helps to maintain the continuity of societies and change the structure of society to become more sublime and elevated.

Heritage Sections

Cultural Heritage

The most important places that must be preserved are the following
- Archaeological monuments: such as works of photography, sculpture and drawing, archaeological structures, caves and the inscriptions, drawings and antiquities they contain.
- Sites: such as various archaeological sites everywhere built by humans, which have aesthetic, artistic, educational and historical aspects.
- Buildings: such as buildings that were built by humans and carry a cultural character because of their shapes, structure, or the place in which they were built.

Natural Heritage

The most important places that must be preserved are the following:
- Biophysical landmarks: They have a high and different aesthetic and scientific value.
-Geological and physiological features: such as areas that constitute habitats for many plants and animals that are threatened with extinction and disappearance.

Heritage Protection

Heritage is currently exposed to many destructions and threats that cause it to decay, which is considered harm that affects all peoples due to changes in social and economic conditions. Therefore, it is preferable to make strenuous efforts to preserve heritage from loss by protecting it at the national level, as well as at the global level, and developing a constitution. Universal by the international organization UNESCO, stipulating that the world heritage must be preserved and protected from destruction, and it also obligated all signatory countries to this constitution to implement this agreement, in addition to the necessity of the participation and cooperation of the international community as a whole, in order to protect the natural and cultural heritage through methods Modern scientific.

Saudi Heritage

Heritage is defined as everything that ancestors left behind to their children, in other words, what previous generations inherited to current generations of customs, traditions, literature, arts, values, and popular, cultural, and material knowledge. Culture is the totality of the distinctive features that characterize a society or social group, including the physical, intellectual, and emotional aspects of life, ways of living, value systems, traditions, and beliefs. Saudi culture is characterized by its rich elements of material and human heritage, traditions, and urban civilizational development, with continuous growth in the visual, musical, and performing arts, in line with artistic production movements in

publishing and literary and intellectual composition. In recent years, the Kingdom of Saudi Arabia has been keen to develop heritage and culture to keep pace with the times. In this context, it has made many changes in various fields, including the cultural field, in accordance with the mission of the United Nations Educational, Scientific and Cultural Organization (UNESCO). Saudi folklore is characterized by a special taste, with deep meanings that blend originality with modernity, and exudes the fragrance of the past and the magic of history. Also, the popular heritage in the Kingdom establishes one of the pillars of national identity, as it is the vessel from which it derives its faith, traditions, authentic values, language and ideas. Culture is an essential part of the ambitious national transformation that the Kingdom of Saudi Arabia is embarking on, and the Kingdom's Vision 2030 stipulates that culture is one of the components of the quality of life. It also stresses that the Kingdom needs to increase its cultural activity by enhancing the Kingdom's cultural status. And its cultural role around the world. Vision 2030 works to develop the cultural system and enable the cultural sector to achieve its potential through many mechanisms and programmes. It is making every effort to achieve its noble goal of 2030 to export Saudi culture, proud of its ancient history, heritage and traditions, to nations in a process of human cultural convergence and exchange.

The Kingdom of Saudi Arabia Was Distinguished by Its Popular Artistic Heritage Related to the Nature of

Its Wide Geographical Area

Heritage is one of the things inherited from ancestors, which passes through a succession of many generations, such as the inheritance of traditions, customs, values, and cultural and popular knowledge related to the nature of the environment and its geographical area. Folk arts appear in several different aspects, such as ancient crafts, dance performances that express the people of the Kingdom, and the characteristics of songs and holidays. .

Saudi heritage is transmitted through generations, and is passed down from generation to generation, as it carries the Saudi national identity and expresses the traditions and doctrine that carry the ideas of the homeland and the Saudi people.

The Most Famous Aspects of Heritage in Saudi Arabia

Folklore

The Saudi heritage bears many manifestations, so its features have been preserved as an authentic folk heritage in the minds of the generations of the Kingdom in a distinctive way, as it reflects a popular artistic image of the homeland, as the Kingdom has been distinguished from ancient times by a number of popular artistic heritages, including dancing and enthusiastic singing customs, and this is what was inherited. Generations from one generation to another, and this appeared in various celebrations and occasions, and the way holidays are celebrated...etc., and among the manifestations of Saudi popular folklore are the following:

• Al-Ardha, Al-Ma'ashi, and Al-Azzawi sword.
• The Najdi Ardha.
• Knock love and lioness, and harvest the prey
• The genitive.
•Daha

Al-Ardha, Al-Ma'sha, and Al-Azzawi Sword: It is a war dance performed on the various coasts of the Kingdom of Saudi Arabia, while carrying guns and swords. It was also found within the folk-art heritage of the Kingdom, specifically in Najran and Asir.

The Najd Ardha: The Najd Ardha appears as part of the folklore and folklore of the Kingdom of Saudi Arabia. The Najdiya is a special parade that takes place in rows and is performed by knights with their horses. Each knight carries his own sword, waving it to the right and left in a performance that is in keeping with the music and tones of the song. The parade also presents With drum beats.

The beat of love, the lioness, and the harvest of the prey: It was a heritage of the eastern region of the Kingdom of Saudi Arabia, and it was given these names according to the names of the regions located in the east of the Kingdom, which bear all the colors of nature and the beautiful waves in the Gulf Sea, in addition to the areas of the city of Al-Ahsa, which are dotted with palm fronds, which It includes a group of folklore colors, including distinctive oriental rhythms and drums.

Majur: Majur is considered one of the forms of popular folklore in the Kingdom in the cities of Mecca and Medina. This type of heritage includes dancing in two rows facing each other with the dancing people. Everyone must also wear a white, loose-fitting uniform with a belt of live ammunition in the middle, in addition to carrying some people. A group of different shaped drums to beat tunes while men sing songs.

Al-Dhaha: Al-Dhaha was part of the popular heritage in the Al-Jawf region and the northern borders, and it is one of the distinctive Saudi folk dances. It is also called "The Knights' Breaths," as it is performed by men standing in two rows facing each other, and it is usually performed during times of the Kingdom's celebrations. Or after victories in invasions.

Types of Folklore in the Kingdom

•Traditional Foods.
• Popular clothing and decorative tools
• Popular proverbs.

Popular foods: Until now, the traditional customs and traditions of the Kingdom are still continuing, and are inherited, including the inheritance of popular foods. Among the most famous inherited dishes is the Kabsa dish, and Al-Mu'araq, which is meat cut into small sizes and cooked in a copper pot with some spices, in addition to some foods:

• **Khmer dish:** The Asir region is famous for it. It is prepared by grinding barley, fermenting it for a period of time, and then serving it with some vegetables.

 •**Masoub:** It is a famous Mecca dish. It is prepared from wheat and baked in a wooden bowl, with honey, ghee and bananas added to it.

Clothes and decorative items: Traditional folk clothing reflects the customs and traditions of the Kingdom of Saudi Arabia, in addition to the decorative tools that complete the external appearance. However, traditional clothing in the Kingdom may differ from one region to another as follows:

Eastern Region: In the eastern region of the Kingdom, the heritage of the folk art of clothing is reflected in men wearing loose-fitting dresses with a number of threads hanging at the neck of the garment, and these threads are known as karkosha.

The northern border: They wear different dresses to suit each season of the year, for example wearing decorated dresses around the chest area or wearing the mardoun dress in the winter, as it is characterized by long, wide sleeves.

Riyadh: Riyadh was distinguished by its bright white clothing, to be in line with the Saudi climate, in addition to the head hat and headband, which are characteristic of men on all occasions. As for women, the black abaya and face covering were and still are among the traditional clothing in the Kingdom.

Najran: Women's clothing is called by a number of different names, including samt, rag, and men's folk clothing goes by a number of names, including "the tail, the hazelnut, the grouse, the tayyar, the jamabiya, the belt."

Popular Proverbs Each region in the Kingdom is unique in its own popular proverbs. Since ancient times, popular proverbs have been used to express an event or situation within the course of daily events, but all popular proverbs carry a cultural character specific to society, with its customs and traditions, and are among the most famous popular proverbs in the Kingdom of Arabia. Saudi Arabia: "In the name of God upon the one who took care of you, and let the genie enter your arm."
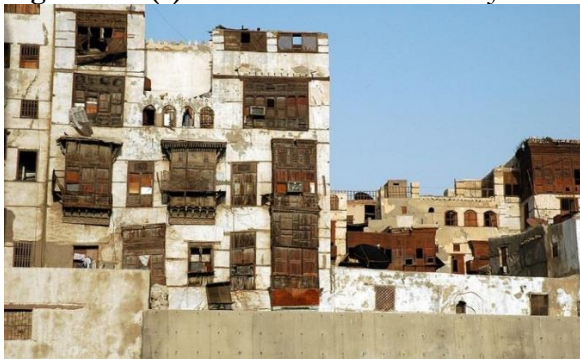
The development of Saudi art

Saudi art and heritage are characterized by carrying the cultural fragrance of society, in addition to Saudi customs and traditions, but it took an evolutionary curve, as traditional folk art was passed down through generations, with the addition of a touch of development in terms of performance, in order to keep pace with different eras and times.

Five Saudi Sites on the World Heritage List

Historic Jeddah

Known locally as Jeddah Al-Balad, as in Figure No. (3), it is located in the center of Jeddah, and its history - according to some sources - dates back to pre-Islamic times. The turning point in its history was during the reign of the Rightly Guided Caliph Othman bin Affan, may God be pleased with him, when he made it a port. To Mecca in the year 26 AH, corresponding to 647 AH. Historic Jeddah includes a number of archaeological and heritage monuments and buildings, such as the ruins of the Jeddah Wall and its historical neighborhoods: the Yemen Neighborhood, the Oppressed Neighborhood, the Sea Neighborhood, and the Levant Neighborhood. There are also a number of historical mosques, the most prominent of which are: the Pasha Mosque and the Al-Sham Neighborhood. Othman bin Affan, Al-Hanafi Mosque, Al-Shafi'i Mosque, Akash Mosque, and Al-Mimar Mosque, in addition to the different historical markets in every region of the Kingdom.

Figure No. (3): Shows the Landmarks of Jeddah.

Al-Ahsa Oasis

Al-Ahsa Oasis in the eastern region of the Kingdom has joined the list of Saudi sites included in the World Heritage List of UNESCO of the United Nations. It is the largest palm oasis surrounded by sand in the world, as it includes more than 1.5 million palm trees producing dates, as in Figure No. (4). It was characterized by great agricultural activity throughout history, and Al-Ahsa was known for its diverse agricultural methods and advanced irrigation systems. Irrigation canals were discovered extending along the eastern parts of the oasis, carrying water from springs and springs to agricultural lands. The oasis is

rich in a number of important heritage monuments, such as the traditional Qaisariya market, the Amiriyya School (House of Culture), and the historic Gawathi Mosque.

Figure No. (4): Shows Al-Ahsa Oasis.

Madain Saleh

It was known in the past as the City of Al-Hijr, as shown in Figure No. (5). It is an archaeological site located in the northwest of the Kingdom of Saudi Arabia, specifically in Al-Ula Governorate, affiliated with the Medina region. The place occupies a strategic location on the road that connects the southern Arabian Peninsula with Mesopotamia, the Levant, and Egypt. The place also has its historical fame, which it derives from its location on the ancient trade route that connects the southern Arabian Peninsula and the Levant. The ruins of Mada'in Saleh include 153 carved rock faces. It also includes a number of Islamic monuments, which include a number of castles and the remains of the Hejaz Railway, which extends for 13 km, as well as the station and locomotives.

Figure No. (5): Shows Mada'in Saleh.

Al-Turaif Neighborhood

Al-Turaif neighborhood is one of the most important political and geographical sites in the Kingdom of Saudi Arabia since the establishment of the first Saudi state, as in Figure No. (6). The neighborhood is located in the heart of the Arabian Peninsula, specifically in Diriyah, northwest of Riyadh The neighborhood is considered the first capital of the Al Saud family. The Al-Turaif neighborhood, which was founded in the fifteenth century AD, bears traces of the Najdi architectural style that is unique to the center of the Arabian Peninsula. In the eighteenth century and the beginning of the nineteenth century, the political and religious role of the Al-Turaif neighborhood grew and it became a center of Al Saud power and the spread of... Salafi reform in Islam. The neighborhood includes traces of many palaces, as well as a city built on the banks of the Diriyah Oasis.

Figure No. (6): Shows Al-Turaif Neighborhood.

Rock Drawings in the Hail Region

The sites of Jubbah, Ratta, and Al-Manjoor (Al-Shuwaimis) in the Hail region are considered among the most important and largest archaeological sites in the Kingdom, dating back to more than 10 thousand years BC, Figure No. (7).

Figure No. (7): Shows the Drawings Drawn on Rocks in the Hail Region.

Second: Practical Framework

From the above, the study concluded in the theoretical framework that artificial intelligence applications can be used to create contemporary designs derived from Saudi heritage and its distinctive decorations and units, and these designs can be used to print contemporary pendants using printing techniques.

Experimentation Controls

The testing controls are determined as follows:

First - Printing Materials

Transparent and opaque fabric printing colors (pigment), dyes, brushes, plastic pipes, different natural and artificial fingerprints with texture - computer - artificial intelligence programs.

Second: Printing Surfaces

The research experiment is based on cotton cloth material.

Third: Printing Methods

- Use artificial intelligence applications to draw and create contemporary designs derived from Saudi heritage and Saudi units and elements.
- Then use the manual printing method appropriate for the design to print it in different pigment colors.
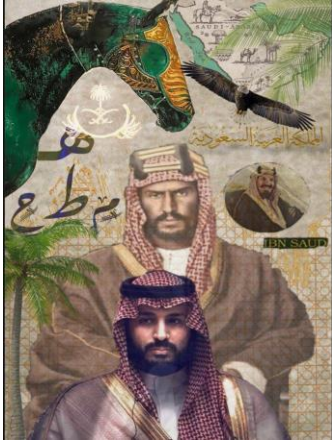
Second: Description of the Printing Works

After that, the design of contemporary designs was created using artificial intelligence programs and then

printed on the fabric using the art of digital printing, and the design was completed with manual printing methods appropriate for the design in transparent and opaque pigment colors.

First Printing Work

Printing work No. (1): executed using artificial intelligence and direct drawing.

Analytical Description

• Printing work (1) represented by: a wall hanging printed using modern and traditional printing methods.
• Materials: white cotton fabric - pigment dough - brushes of different sizes.
• Methods and methods by which it is implemented: Using artificial intelligence programs to make the design - the basic technology of digital printing - and the added technology of direct drawing.

Second Printing Work

Printing work No. (2): Executed Using Artificial Intelligence and Direct Drawing Printing. Dimensions: 40 X 60 cm.
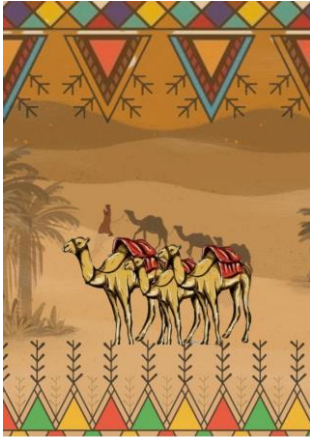

Analytical Description

• Printing work (2) represented by: a wall hanging printed using modern and traditional printing methods.
• Materials: white cotton fabric - pigment dough - brushes of different sizes.

• Methods and methods by which it is implemented: Using artificial intelligence programs to make the design - the basic technology of digital printing - and the added technology of direct drawing.

The third artistic work

Printing work No. (3): executed using artificial intelligence and direct drawing printing. Dimensions: 40 x 60 cm.

Analytical description

• Printing work (3) represented by: a wall hanging printed using modern and traditional printing methods.
• Materials: white cotton fabric - pigment dough - brushes of different sizes.
• Methods and methods by which it is implemented: Using artificial intelligence programs to make the design - the basic technology of digital printing - and the added technology of direct drawing.

Fourth printing work

Printing Work No. (4): Executed Using Artificial Intelligence and Direct Drawing Printing. Dimensions: 40 X 60 Cm.

Analytical Description

• Printing work (4) represented by: a wall hanging printed using modern and traditional printing methods.
• Materials: white cotton fabric - pigment dough - brushes of different sizes.

•Methods and methods by which it is implemented: Using artificial intelligence programs to make the design - the basic technology of digital printing - and the added technology of direct drawing.

Fifth Printing Work

Printing Work No. (5): Executed Using Artificial Intelligence and Direct Drawing Printing. Dimensions: 40 X 60 Cm.

Analytical Description

• Printing work (5) represented by: a wall hanging printed using modern and traditional printing methods.
• Materials: white cotton fabric - pigment dough - brushes of different sizes.
•Methods and methods by which it is implemented: Using artificial intelligence programs to make the design - the basic technology of digital printing - and the added technology of direct drawing.

Sixth Printing Work

Printing Work No. (6): Executed Using Artificial Intelligence and Direct Drawing Printing. Dimensions: 40 X 60 Cm.

Analytical Description:

• Printing work (6) represented by: a wall hanging printed using modern and traditional printing methods.
• Materials: white cotton fabric - pigment dough - brushes of different sizes.
•Methods and methods by which it is implemented: Using artificial intelligence programs to make the design - the basic technology of digital printing - and the added technology of direct drawing.

Results and Recommendations

First: Results

• The artificial intelligence system is one of the most important methods and sources of modern design that is used to enrich the designs of contemporary printing presses.
• Old designs related to Saudi heritage can be used as an important source of inspiration that is used in producing modern designs for Saudi art through new treatments.
• The hypotheses have been verified and it has been proven that artificial intelligence applications can be used to create contemporary heritage designs to enrich typographic works to preserve Saudi heritage.

Second: Recommendations

• Increase specialized research linking art and design with artificial intelligence.
• The need for the artist to be aware of changing technological developments, which helps in creating new designs inspired by older designs while processing them artistically, using artificial intelligence systems.
• Research and view more studies on artificial intelligence that help enrich and enhance printing works.
•The need to benefit from artificial intelligence systems in the fields of various arts and the field of textile printing, especially in creating innovative designs suitable for the modern era.

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