Egyptian historical influence on digital image coding and its impact on the connections between heritage and modernity

Dr. Marwa Mohamed Saleh Auda
Lecturer at faculty of fine arts - Décor department – Mansoura University
marwaauda@hotmail.com

Abstract:

This study shows the combination of digital image code and its impact on the links between heritage and modernity. The study shows that using the digital image code to convert cultural heritage into digital images enable to access this heritage and opens up new opportunities for designers and artists to give modern touches to cultural heritage. The use of modern technologies can help stimulate creativity and innovation, and transform cultural heritage into new artistic creations. However, care must be taken to strike the appropriate balance between preserving heritage elements and transforming them into modern works of art, without losing the important links between past and present.

Appearance of digital graphics color, painting and drawing changed the industries of the image-based in many sectors. After Effects become common like using pencils still moving-image design and manipulation processes can be accessible to every designer using the internet which has become an indispensable platform for interactive visual designs.

In Graeco-Roman times in the Fayoum region, a portrait was placed over the face of a deceased. These mummy portraits show inter-individual diversity.

A custom specific to the Ancient Egyptian Graeco-Roman period, found in numerous burials of that period, while the rest of the body was wrapped in linen according to the typical ancient Egyptian.

This represents some kind of Egyptian religious with Greek influences called "Graeco-Egyptian syncretism phenomenon".

the use of digital coding in fashion fabric design is an exciting and rapidly evolving field that has the potential to transform the way we think about textiles and fashion. As technology continues to advance and new tools and techniques are developed, it is likely that we will see even more innovation and creativity in this space.

Keywords:

Faces of Fayoum, digital image, textile printing

ملخص البحث:

تتناول هذه الدراسة الجمع بين كود الصورة الرقمية وأثره على الروابط بين التراث والحداثة. وتبين الدراسة أن استخدام كود الصورة الرقمية لتحويل التراث الثقافي إلى صور رقمية يمكّن الجمهور من الوصول إلى هذا التراث بشكل أفضل ويفتح أمام المصممين والفنانين فرصًا جديدة لإضفاء لمسات حديثة على التراث الثقافي. ويمكن أن يساعد استخدام التقنيات الحديثة في تحفيز الإبداع والابتكار، وتحويل التراث الثقافي إلى إبداعات فنية جديدة. ومع ذلك، يجب الحرص على تحقيق التوازن المناسب بين الحفاظ على العناصر التراثية وتحويلها إلى أعمال فنية حديثة، دون فقدان الروابط المهمة بين الماضي والحاضر. يتطلب ذلك فهماً عميقاً للتراث الثقافي وأساليب التصميم الحديثة، والقدرة على توظيف التقنيات الحديثة بطريقة تعزز القيمة الفنية للتراث الثقافي. يمكن لهذا الجمع بين كود الصورة الرقمية والتراث الثقافي أن يساعد في تعزيز الوعي بالتراث الثقافي

والحفاظ عليه للأجيال القادمة، وتشجيع الناس على الاهتمام بتاريخهم وثقافتهم. ويمكن استخدام هذا الجمع في مختلف المجالات الفنية والتصميمية، ولكن يجب أن يتم بحذر ومتوازن، حيث يتعين الحفاظ على القيم التراثية وتعزيزها دون التأثير عليها أو تشويهها. يمكن أن يساهم هذا الجمع في تعزيز الروابط بين الماضي والحاضر وجوه الفيوم مصطلح يجسد مجموعة من اللوحات الواقعية للشخصيات رسمت علي توابيت مومياوات مصرية في الفيوم إبان فترة الوجود الروماني في مصر.

حيث تم فيها الرسم والطلاء على لوحات خشبية بشكل كلاسيكي يجعلها من أجمل الرسومات في فن الرسم الكلاسيكي العالمي - وفي الواقع فان لوحات الفيوم هي الوحيدة من نوعها في العالم.

عثر على مومياوات الفيوم في عدة أجزاء من مصر إلا أن منطقة حوض الفيوم شملت أغلب الاكتشافات ما جعلها تحمل هذا الاسم وتحديدا من منطقة هوارة وحتى أواسط مصر، ويرجح علماء الآثار أن تكون هذه اللوحات الجنائزية المصرية قد صنعت في فترة مصر الرومانية - بينما تم لف باقي الجسد بالكتان وفقًا للمصريين القدماء.

يمثل هذا نوعًا من الديانات المصرية ذات التأثيرات اليونانية تسمى "ظاهرة التوفيق بين مصر اليونانية"

هذا الارتباط في الخلفية التاريخية هو الأساس لإنشاء قطعة فنية ذات مراجع تاريخية مدعمة بمعايير التكنولوجيا الحديثة، وتظهر عظمة الماضي المتمثلة في لوحات وجوه الفيوم ذات التأثيرات الثقافية المختلفة في تصميم كود التكنولوجيا المتقدمة. والسؤال هو ما مدى تأثير الحضارة المصرية القديمة على إبداع فنان وجوه الفيوم من الرمز والروحانية ودورهم في إنشاء الكود الرقمي وكيف يرتبط ذلك بالتكنولوجيا المتقدمة.

الماضي والمستقبل هما فضاءان من الزمن نفصلهما عادة بثالث، الحاضر. هل من الممكن إنشاء أبجدية مرئية معاصرة تمتد عبر العصور.

الكلمات المفتاحية:

وجوه الفيوم ، الصورة الرقمية ، طباعة المنسوجات

1. Introduction:

This link in historical background between antient Egyptian and Greco roman heritage form the basis to create a piece of art with historical references supported with modern technology standards, the greatness of the past, represented in the paintings of Fayoum faces with different cultural influences, appears in an Advanced technology code design.

The question is what is the extent of the influence of the ancient Egyptian civilization on the creativity of the Fayoum Faces artist; Symbol and spirituality and their role in creating a code and how this relates connections to advanced technology.

The past and the future are two spaces of time that we usually separate by a third party which is the present. Is it possible to create a contemporary Visible alphabet that extends through the ages?

1.1- Research problem:

Highlight challenges and limitations to the use of digital coding in fashion fabric design. One of the main challenges is the need for designers to learn new skills and tools to work with the software and coding languages used in CAD. Additionally, there are concerns about the environmental impact of digital design and production, as well as issues around intellectual property and copyright infringement.

1.2- The aim of the research:

The research aim is to declare that the Egyptian heritage has had a significant impact on digital image coding, particularly in the field of computer graphics and 3D modeling.

Here are some examples:

I. Hieroglyphics: Egyptian hieroglyphics, the ancient writing system consisting of pictures and symbols, have influenced the development of computer graphics and user interfaces. The use

of icons and symbols in modern computing is reminiscent of hieroglyphics, and the design of graphical user interfaces (GUIs) is often inspired by the visual language of ancient Egypt.

II. 3D modeling: The use of 3D modeling in digital image coding has been influenced by the ancient Egyptian art of sculpture. Egyptian sculptors were known for their use of proportion and symmetry, which are important principles in 3D modeling. Additionally, the use of texture and surface details in Egyptian art has inspired modern techniques for creating realistic 3D models.

III. Architecture: Egyptian architecture, particularly the monumental structures such as pyramids and temples, has influenced the development of computer-aided design (CAD) software. The precise mathematical calculations and geometrical principles used in ancient Egyptian architecture have been applied to modern CAD software, allowing architects and designers to create complex structures with great accuracy and precision.

Overall, the rich cultural heritage of ancient Egypt has provided inspiration and guidance for modern digital image coding, particularly in the areas of computer graphics, 3D modeling, and architecture. By drawing on this legacy, modern designers and developers are able to create innovative and visually striking works that bridge the gap between the past and the present, and connect people to their cultural heritage.

1.3- Research Methodology:

The methodology for the study would involve a combination of qualitative and quantitative research methods.

1. Literature review: The first step would be to conduct a thorough review of existing literature on the topic. This could involve analyzing academic articles, books, and other publications on Egyptian art and architecture, digital image coding, and the intersection of heritage and modernity.

2. Data collection: The next step would be to collect data on the use of Egyptian art and architecture in digital image coding. This could involve analyzing digital images and graphics that incorporate elements of Egyptian art and architecture, as well as interviewing designers and developers who have used these elements in their work.

3. Data analysis: The collected data would then be analyzed to identify patterns and trends in the use of Egyptian art and architecture in digital image coding. This could involve using qualitative analysis techniques to identify themes and categories in the data, as well as quantitative analysis techniques to measure the frequency and distribution of these themes and categories.

4. Drawing conclusions: Based on the analysis of the data, conclusions could be drawn about the ways in which Egyptian art and architecture have influenced digital image coding, and the impact of this influence on the connections between heritage and modernity. This could involve identifying specific examples of how Egyptian elements have been incorporated into digital designs, as well as discussing the broader implications of this trend for the relationship between the past and present in technology.

5. Recommendations: Finally, the study could make recommendations for further research and exploration in this area. This could involve identifying areas where more research is needed, as well as suggesting potential avenues for future development of digital image coding that incorporates elements of Egyptian heritage.

2. The look of code and patterns in technology design.

- **Engaging designers with material**
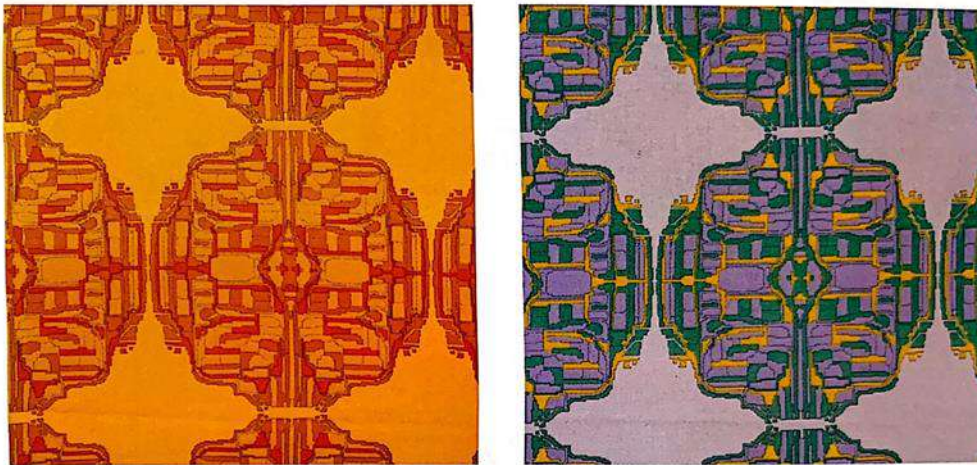
Pic (1), psychedelic colors for futuristic textiles by Eddie Squires,1967.

Digital coding in fashion fabric design is recommended for further research because it has the potential to revolutionize the way fabrics and textiles are designed and manufactured. With the use of computer-aided design (CAD) software and digital coding, designers can create intricate patterns and textures that would be difficult or impossible to achieve with traditional methods. This can lead to greater creativity, efficiency, and sustainability in the fashion industry.

OCR-A and OCR-B are ultra – modern typefaces which began to permeate design culture, appearing on magazines and fashion. Designers exploring the new aesthetic, the next generation of designers work on the inspiration of the computer gaming look, exploring 3D in creating 2D image for fabric and textiles. Engaging designers with material and antienvironment make the digital technology seems to both complement and provide innovative decorative solutions.

Patterns can be programed to repeat randomly or with sequence but with notion that produced 2D and 3D forms can look too perfect which occasionally occur intentionally planned,

as there is a partnership between creator and machine which will open digital media culture,

digital visions for costumes, fashion and textiles which made in cods, explores the realms of contemporary surface, form, texture, image and motion by using 2D ,3D,4D with interaction tools.

Factors determined the use of computing technology into the creative fields, textile industries highly developed with the evolution code and the interest in the digital media from artist and scientists as well.

3. Material and code use in fashion

The status of digital coding in fashion fabric design is currently in a state of growth and development. Many fashion companies are beginning to incorporate digital design and coding into their processes, allowing for faster prototyping and more efficient production. Additionally, advancements in 3D printing and other technologies are making it possible to create custom fabrics with unprecedented precision and detail.
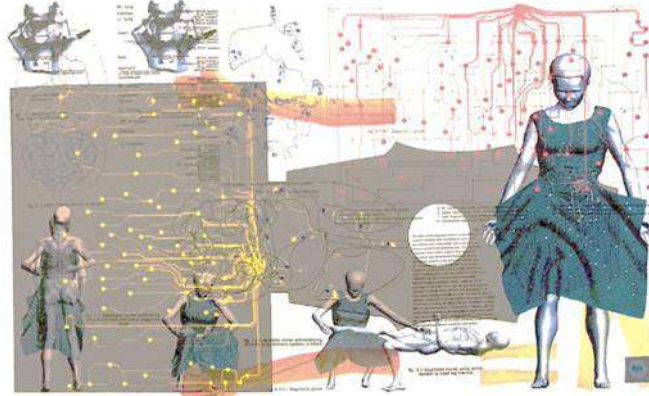
Pic (2) J.Morgan Puett, computer – generated diagram for nurse uniform,2003.

In order to communicate something significant with changing age, designers frequently adopt new alphabet, codes and languages which can be seen; hyper – real, self-generating, macro, time-based and incorporating abstract provided by digital media.

Contemporary design can contain both handmade and digital techniques with individuality which brought to industrial mass-production with newborn aesthetics: Technical crafts.

Using ink-jet printing now allow designers to use variety of applications, hyper-realistic and complex imagery can be transmitted onto increasing materials through computer screens. A polymath can approach to design with digital methods.

Artists enabled to develop desirable propositions with photorealistic imaging, breakthroughs in software allowed into new sensory dimensions which enhance visual appearance and tactile in the material production of textiles.

Laser technology is now in 2D and 3D, we can see high level of innovation in fashion, costumes and interior design applications, and in the field of sustainable textile design.

The idea of removing material in order to create a design with computer-controlled laser-cutting that technique was subverted to method involving applique were laser cut strips collaged onto substrate, and the result is that technology and craft both of them ensure visual and tactile appeal.

In the late 1990s there was a passion to control and create an artwork which is new and individual

Ex. Designer (*Iris Van Herpen*)

As a child designer iris preferred the physicality of making out door art than computer digital one, her earl collection (mummification), she uses challenging martials like plastic, rubber, metal and leather adjusting with fine cutting and construction by manipulation of their origin material, using hand construction, finishing skills and industrial techniques to produce a small but rich collection full of drama and illusion.

Engineering sectors begin to consider organic, recycled, low-cost and high – performance materials to textless and fashion as resolution.

Pic (3) Van Her pen collections Radiation Invasion 2009.

4. The future of digital past

'If a fabric can be wiped and rewritten with fresh image, like computer screen, what would be the need for textile designers? And, more importantly, what would be the need for more than one garment in that shape? Seasonal print collections could become obsolete. Instead, consumers might download new collections of surface design into their "digital" garments as and when they chose.'   Suzanne Lee.

In no time computing technology became sophisticated and invisible influenced by Imagineering narrative of film and normalized by daily use. The Matrix (1999), Blade Runner (1982) movies which digitally scanned to differentiate between the eye of human and that of a genetically manufactured albeit deceptively similar 'replicant'.

5. Coded Material and 3DComputer – graphic modelling

• **3D matrices and contemporary e-textiles**

The industrial-design technique of rapid-prototyping, or digital fabrication by removing the hand-making and manufacturing processes from the product-inevitably filtered into fashion design. The technology has inevitably filtered into fashion design, and 3D products can now be machine-produced directly from computer by data file numerical control (CNC) three-dimensional printing process.

Rapid-prototyping material outputs appear aesthetically plastic and solid so the next stage of technology will refine the printing media.

Code and generative-system design offer limitless tools for design solutions, it can have in-built strategies that can digitally populate surface and space with form and pattern.

Software such as Auto maker has been developed by programmers who use randomly generated 3D matrices to allow consumer to co-design without any experience of code and became an 'open-source' that allow users to develop it, use it and share it.

Pic (4) Entoptic Perception- Netherlands textile Museum, Tilburg 2004.

Contemporary e-textiles became responsive elements into fabric by sensors, photonic fibers which were made up into textile forms and linked to microcomputers that will enable changes in patterns and colors.

Textiles, with their variable characteristics of weight, solidity and softness, present a particular challenge to interactive haptic technology.

The development of haptic tools to facilitate 3DComputer – graphic modelling is evolving towards convincing sensory devices that emulate the touch of a range of martials.

Physical interaction with digital media will be a key driver in determining our future design experience.
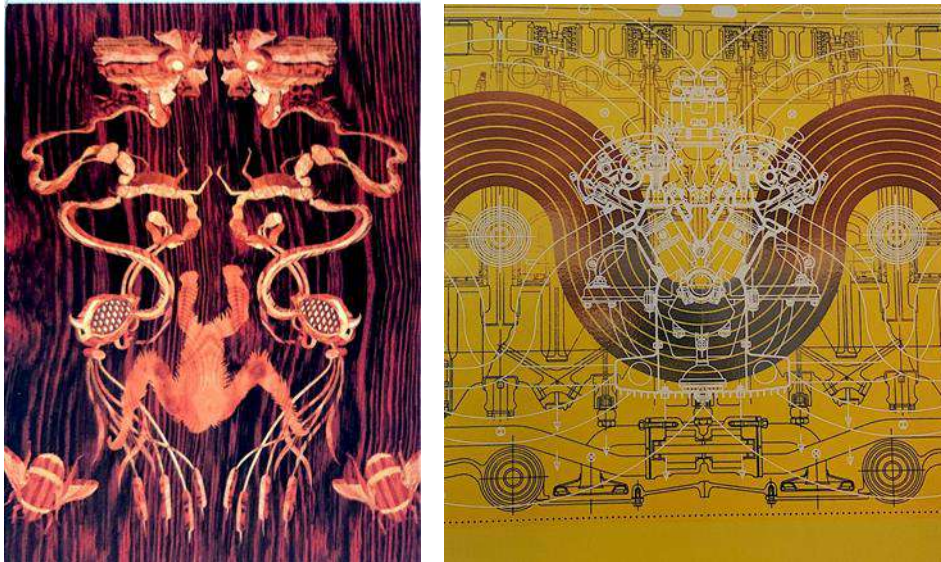
Pic (5) Rory Crichton recreated in silk printed Giles Deacon,2005.

The intuitive Microsoft surface computing platform similarly recognizes hand gestures, touch and physical objects, and enables multi-interface computer use. Wireless phones and cameras connect to the surface without any plugging – in, so that images can be linked together or

transferred seamlessly from one device to another, simply via their placement on the table top – like screen.

In 2004, fashion designer Martin Margiela provided a new experience in co-designing with a live event hosted by show studio.

Margiela posted a pattern for a simple but incomplete shift dress, inviting anyone to contribute to the design; the result was then exhibited on the show studio website.

In this era of invisible computing, the designer, maker and artist have quickly adopted new vocabularies, visual languages and codes to enable expansive commentary on our emerging lifestyles, desires or dreams.

Digital media have provided revolutionary forms of creative expression through a myriad of methods, from the screen- based, with its abstractions and hyper-real macro and micro-scenarios (A micro-scenario is a small fragment or description about the future that can range from the plausible to the counter-factual, it can be generated and used in the course of diverse planning methods and activities. Formal scenario planning is used in foresight, futures studies, and strategy and originates in post-World War II military planning) time-based, self-generating, fast-evolving imagery and media that have evoked consideration of new kinds of space and infinite zones, the potential future for which, in creative terms, is shifting, flexible, complex and unbounded.

Coding languages and CAD software used in fashion design

1. Adobe Illustrator: Adobe Illustrator is a vector graphics editor that is widely used in the fashion industry for drawing and creating designs. It is particularly useful for creating technical drawings and flat sketches.

Pic (6) Modular textile system EunsuK Hur, Nomadic wonderland ,2009

2. AutoCAD: AutoCAD is a computer-aided design software that is commonly used in the architecture and engineering industries, but it is also used in fashion design for creating 2D and 3D designs.

3. CLO 3D: CLO 3D is a 3D fashion design software that allows designers to create virtual clothing samples and simulate fabric draping and movement.

4. Python: Python is a popular general-purpose programming language that can be used for a wide range of tasks, including data analysis and automation. It is often used in fashion design for scripting and automation tasks.

5. Java: Java is another popular programming language that is used in the fashion industry for developing e-commerce websites and other online platforms.

6. HTML/CSS: HTML (Hypertext Markup Language) and CSS (Cascading Style Sheets) are the building blocks of web design. They are commonly used in fashion design for building websites and online stores.

These are just a few examples of the many CAD software and coding languages that are used in fashion design. The specific tools and languages used will depend on the designer's needs and preferences, as well as the specific requirements of the project.

6. Egyptian and Graeco-Roman Culture in Digital Design

• **Transform the history into code**

The rich history of ancient Egypt and Graeco-Roman civilizations has influenced many aspects of modern culture, including digital design. One specific example is the Fayoum portraits, which were painted in the Graeco-Roman period and placed over the face of a deceased person in burials in the Fayoum region. These portraits show the influence of Greek culture on ancient Egyptian religious beliefs and practices, and are a prime example of the "Graeco-Egyptian syncretism phenomenon."
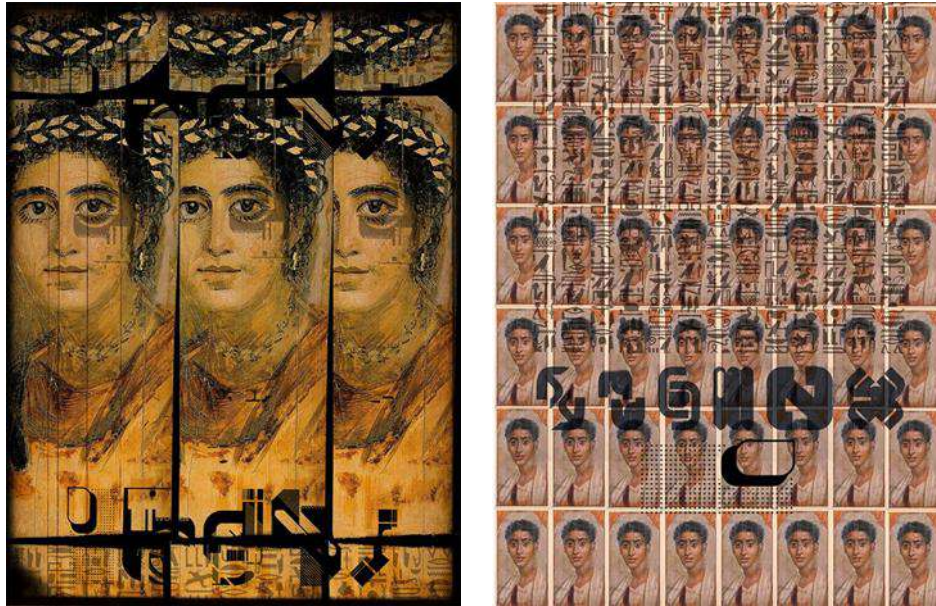

Pic (7) digital coding printed antient Egyptian Greco-Roman futuristic design by the resersher,2023.

The use of digital technology in design has allowed for new forms of artistic expression and has had a profound impact on the way we view and understand the past. With the ability to manipulate images and graphics in real-time, designers are able to bring the beauty and intricacy of historical artifacts and artworks into a contemporary context. This has allowed for new interpretations of the past and has sparked new creative ideas that bridge the gap between heritage and modernity.

The use of digital image code in Egyptology has had a significant impact on the connections between heritage and modernity. Digital image code refers to the process of using algorithms and computer software to analyze and interpret images of ancient artifacts and monuments. This

technology allows scholars to study and understand ancient Egyptian art and culture in new and innovative ways, while also preserving and protecting these fragile artifacts for future generations.

Pic (8) digital coding printed antient Egyptian Greco-Roman futuristic design by the resersher,2023.

7. Coded design elements and alternatives

There are several design elements and alternatives that can be used to combine digital image coding and its impact on the connections between heritage and modernity, including:

1- Color: The use of color can greatly affect the way digital images are perceived, and can be used to highlight certain aspects of heritage or modernity. For example, using warm colors such as red, orange, and yellow can evoke a sense of tradition and heritage, while using cool colors such as blue and green can create a more modern and contemporary feel.

2- Texture: The use of texture can create depth and dimensionality in digital images, and can be used to highlight different aspects of heritage and modernity. For example, using a textured background can create a sense of age and history, while using a smooth background can create a more modern and cleaner feel.

3- Typography: The use of typography can greatly affect the way information is presented in digital images, and can be used to highlight different aspects of heritage and modernity. For example, using traditional and ornate typography can evoke a sense of tradition and heritage, while using modern and sleek typography can create a more contemporary feel.

4- Layout: The layout of digital images can greatly affect the way they are perceived, and can be used to highlight different aspects of heritage and modernity. For example, using a grid layout can create a sense of order and structure, while using an asymmetrical layout can create a more dynamic and modern feel.

5- Alternatives to traditional heritage representation: Digital image coding can provide alternatives to traditional methods of representing heritage and culture. For example, instead of displaying physical artifacts in a museum, digital images can be used to create interactive exhibits that allow viewers to explore and learn about cultural heritage in a more immersive way.

Dr. Marwa Mohamed Saleh Auda ،Egyptian historical influence on digital image coding and its impact on the connections between heritage and modernity ،
Maǧallaẗ Al-ʿimārah wa Al-Funūn wa Al-ʿulūm Al-Īnsāniyyaẗ، vol10، no.49، January 2025
685

Pic (9) digital coding printed antient Egyptian Greco-Roman futuristic jacket design by the resersher,2023.

6- Integration of modern technology: Modern technology, such as virtual reality and augmented reality, can be integrated into digital image coding to create more engaging and interactive experiences. For example, using augmented reality to overlay information about a heritage site onto a digital image can provide a more dynamic and educational experience for viewers.

7- Use of symbolism: Symbolism can be used to represent different aspects of heritage and modernity in digital images. For example, using traditional symbols such as the lotus flower can represent cultural heritage, while using modern symbols such as the WIFI icon can represent modernity.

8- Inclusion of diverse perspectives: Digital image coding can be used to incorporate diverse perspectives and voices into the representation of heritage and culture. For example, including images and narratives from different cultures can provide a more inclusive and accurate representation of cultural heritage.

9- Use of multimedia: Digital image coding can incorporate different types of media, such as video and audio, to provide a more immersive and interactive experience. For example, using video to showcase traditional cultural practices can provide a more engaging and educational experience for viewers.

10- Collaborative design: Collaborative design approaches can be used to incorporate input from different stakeholders, such as cultural experts and community members, to create a more inclusive and accurate representation of heritage and culture. For example, involving community members in the design process can provide insights into the cultural significance of certain images and symbols, and can ensure that the final product is culturally sensitive and respectful.

Pic (10) digital coding printed antient Egyptian Greco-Roman futuristic design by the resersher,2023.

One example of the use of digital image code in Egyptology is the creation of high-resolution 3D models of ancient Egyptian artifacts and monuments. These models allow researchers to study the details of these objects in ways that were previously impossible, while also preserving the original artifacts from damage that could be caused by handling or exposure to light.

As digital technology continues to evolve, we can expect to see even more innovative applications of historical themes and cultural references in digital design. With the increasing interest in sustainable textile design and the use of organic, recycled, and low-cost materials, designers will be able to create pieces that are both aesthetically pleasing and environmentally friendly. The future of digital design is one that is full of possibilities and will continue to be shaped by the past and the present.

Pic (11) digital coding printed antient Egyptian Greco-Roman futuristic jacket design by the resersher,2023.

As technology continues to evolve and expand, it is becoming increasingly clear that the traditional roles and functions of design, fashion and textiles will be impacted. The idea of being

able to constantly change and update a garment through digital means could potentially render traditional design processes, such as seasonal print collections.

The future of fashion, textiles, and design will likely be shaped by advancements in technology and the increasing integration of digital media into creative processes. As computer software and hardware continue to improve, the possibilities for designers will expand and allow for greater experimentation with form, texture, image, and motion.

However, it is important to note that the human touch will always play a role in design, as artists and designers bring their own unique visions and interpretations to their work. The fusion of technology and craftsmanship will continue to push the boundaries of what is possible and lead to new and exciting developments in the world of design.

This expanded table provides a more comprehensive analysis by including additional columns for examples and implications. The examples column showcases specific instances or trends related to each aspect, while the implications column highlights the potential outcomes or effects of the discussed points.

Aspect	Analysis	Examples	Implications
Impact of digital technology on sustainable textile design.	Digital technology has significantly influenced the field of sustainable textile design. Designers are leveraging digital tools to create visually appealing and eco-friendly textiles.	- Use of eco-friendly materials in digital textile production. Implementation of sustainable production processes. Increased consumer awareness and demand for sustainable textiles.	- Reduction in environmental footprint of textile industry, greater availability of sustainable textile options.
Integration of ancient Egyptian influences and digital technology in fashion and textiles.	The integration of ancient Egyptian influences and digital technology has opened up new design possibilities. Advancements in computer-aided design and digital printing have enabled designers to create intricate and visually striking designs inspired by the past.	- Incorporation of ancient Egyptian motifs and symbols in modern fashion. Detailed and intricate designs inspired by ancient Egyptian art. Utilization of digital printing techniques to replicate ancient Egyptian textiles.	- Preservation and promotion of cultural heritage through fashion, increased design creativity and historical appreciation.
Example of Iris van Her pen's work	Iris van Her pen's avant-garde designs showcase the fusion of traditional craftsmanship with modern technology, resulting in unique and innovative pieces.	- 3D-printed garments. Integration of digital elements, such as LED lights, into fashion designs. Exploration of unconventional materials and structures.	- Pushing the boundaries of fashion and technology. Inspiring other designers to experiment with digital techniques.
Digital fabrics	Digital fabrics are designed and created using digital technologies, such as computer-aided design and digital printing. They offer unique and customizable designs, revolutionizing the textile industry.	- Customizable patterns and colors. Intricate and precise designs. Reproducibility of complex patterns.	- Increased design flexibility and personalization. Streamlined production processes and reduced waste.
Revolution of digital fabric printing	Digital fabric printing has revolutionized the textile industry by enabling faster and more cost-effective production and greater design flexibility.	- Direct-to-fabric printing. On-demand production. Ability to print complex and gradient patterns.	- Shorter production lead times and reduced inventory Expanding design possibilities and experimentation.

Smart fabrics	Smart fabrics incorporate technology to provide new functionalities, such as color-changing, temperature regulation, and responsive behaviors.	- Fabrics that change color based on environmental conditions. Temperature-regulating textiles for enhanced comfort. Interactive fabrics that respond to touch or movement.	- Integration of technology and textiles for enhanced user experiences. - Potential applications in various industries.
Advantages of digital fabrics	Digital fabrics offer new avenues for creativity, innovation, and efficiency in textile design and manufacturing. They have the potential to transform various industries and applications.	- Rapid prototyping and iteration of designs. Cost-effective production and reduced material waste. Versatility in design applications and market segments.	- Accelerated innovation and design experimentation. Improved production efficiency and reduced environmental impact.
Conclusion	Digital fabrics represent a growing industry that combines traditional textile manufacturing with digital technology, offering new possibilities for creativity and customization.	- 3D-printed fashion showcased on runways. Integration of wearable technology in everyday garments. Customizable textiles for interior design and home furnishings.	- Continued growth and diversification of digital fabric applications. Advancement of personalized and interactive textiles.

8. Analysis shows the following:

1.Digital fabrics are designed and created using digital technologies such as computer-aided design and digital printing. They offer unique and customizable designs, revolutionizing the textile industry.

2.Digital fabric printing has brought about a revolution in the textile industry by enabling faster and more cost-effective production, as well as greater design flexibility.

3.Smart fabrics incorporate technology to provide new functionalities, such as color-changing, temperature regulation, and responsive behaviors.

4.Digital fabrics offer several advantages in textile design and manufacturing, including creativity, innovation, and efficiency.

5.Digital fabrics represent a growing industry that combines traditional textile manufacturing with digital technology, providing new possibilities for creativity and customization.

8.1.Research results:

The connection between ancient Egyptian and Greco-Roman art can be traced back to the period of Hellenistic rule over Egypt, which began in 332 BC with the conquest of Egypt by Alexander the Great. This period marked a fusion of Egyptian and Greek culture, which had a significant influence on the development of art in both regions.

One of the most notable examples of this fusion is the Fayum portraits, which were created in Roman Egypt during the first three centuries AD. These portraits were painted on wooden panels and depicted realistic images of people from various social classes. They were heavily influenced by both Egyptian and Greek arts, with some portraits showing clear Greek stylistic features, while others retained more traditional Egyptian elements.

Another example of this fusion can be seen in the use of Egyptian motifs in Roman art, such as the depiction of the Egyptian goddess Isis and the use of Egyptian-style hieroglyphs and patterns in Roman mosaics and wall paintings.

Furthermore, ancient Egyptian art had a significant impact on the development of Roman art, particularly in terms of sculpture. Roman artists were greatly influenced by the use of proportion and balance in ancient Egyptian sculptures, as well as the use of symbolism and hieratic scale. This can be seen in the depiction of Roman emperors as God-like figures, similar to the way Egyptian pharaohs were depicted in art.

In conclusion, the connection between ancient Egyptian and Greco-Roman art is a complex and multifaceted one, influenced by cultural exchange and historical events. The fusion of these two styles resulted in a unique blend that has left a lasting impact on the development of art in both regions.

9. Research recommendations:

1- Study the impact of digital image technologies on documenting and preserving cultural heritage, and how these technologies can be used to maintain the links between heritage and modernity.

2- Analyze the different methods and techniques for converting heritage images into digital images, and study how these techniques affect the links between heritage and modernity.

3- Study the impact of digital images on the way cultural heritage is documented, and how to change the digital images to present cultural heritage in a more modern and interactive way.

4- Analyze how digital image technologies can be used to document cultural heritage and show it in a clearer and more accurate way, and how these technologies can be used to analyze the relationships between different heritage elements.

5- Study the impact of digital image technologies on changing traditional methods of documenting cultural heritage, and how to change the way cultural heritage is interpreted and presented.

6- Analyze how digital image technologies can be used to enrich the connection between cultural heritage and modernity, and how to change the way cultural heritage is interpreted and presented to the public in a more interactive and modern way.

7- Study the impact of digital image technologies on the relationship between cultural heritage and cultural identity, and how these technologies can be used to increase awareness of cultural heritage and preserve it as part of cultural identity.

8- Analyze how digital image technologies can be used to create links between cultural heritage and modernity across time, and how these technologies can be used to document cultural heritage in a way that reflects the evolution of civilization and culture over time.

9- Study how digital image technologies can be used to analyze the relationships between artworks, cultural heritage, and modernity, and how these technologies can be used to show the links between traditional and modern art.

10- Study the impact of digital image technologies on analyzing cultural relationships between different cultures, and how these technologies can be used to document cultural heritage for different cultures and show their differences and similarities in a clear and accurate digital form.

10.Reference:

Books:

1. Bennett, Michael, and Sara Hume. Egyptian and Greco-Roman Art in the Cleveland Museum of Art. Cleveland: Cleveland Museum of Art in association with Indiana University Press, 2012.

2. Roth, Ann Macy. The Art of Ancient Egypt and the Greco-Roman World. Oxford: Oxford University Press, 2012.

3. Marconi, Clemente, ed. The Oxford Handbook of Greek and Roman Art and Architecture. Oxford: Oxford University Press, 2014.

4. Allen, James P. Egyptian Art in the Age of the Pyramids. New York: Metropolitan Museum of Art, 1999.

5. Ramage, Nancy H., and Andrew Ramage. Roman Art. 6th ed. Upper Saddle River, NJ: Pearson, 2015.

6. Aldred, Cyril. Egyptian Art. Rev. ed. London: Thames & Hudson, 1998.

7. Metropolitan Museum of Art. Egyptian Art in the Age of the Pharaohs. New York: Metropolitan Museum of Art, 1999.

8. Neer, Richard T. Greek Art and Archaeology. 3rd ed. London: Thames & Hudson, 2012.

9. Wheeler, Mortimer. Roman Art and Architecture. Rev. ed. New York: Thames & Hudson, 1985.

10. Allen, Thomas George. Egyptian and Greek Art: A Study in Parallel Development. New York: HackerArt Books, 1978.

Websites:

1. The Metropolitan Museum of Art. "Ancient Egypt." Accessed May 22, 2023. https://www.metmuseum.org/toah/hd/egyp/hd_egyp.htm.

2. The British Museum. "Ancient Egypt and Greece." Accessed May 22, 2023. https://www.britishmuseum.org/collection/themes/ancient-egypt-and-greece.

3. The Louvre Museum. "Egypt and the Ancient Near East." Accessed May 22, 2023. https://www.louvre.fr/en/departments/egypt-and-ancient-near-east.

4. The Getty Museum. "Ancient Art." Accessed May 22, 2023. https://www.getty.edu/art/collection/categories/cat_ancient_art.html.

5. Smithsonian National Museum of Natural History. "Ancient Egyptian Art." Accessed May 22, 2023. https://naturalhistory.si.edu/visit/exhibits/egyptian-art.

6. The Penn Museum. "Ancient Egypt and Nubia." Accessed May 22, 2023. https://www.penn.museum/collections/ancient-egypt.

7. Ancient History Encyclopedia. "Greco-Roman Art." Accessed May 22, 2023. https://www.ancient.eu/Greco-Roman_Art/.

8. National Archaeological Museum of Naples. "Greek and Roman Art." Accessed May 22, 2023. https://www.museoarcheologiconapoli.it/en/greek-and-roman-art/.