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The Interactive Digital Media as a Scenography

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Abstract

Interactive Digital Media have become the most important pillars on which contemporary 21st century scenography is based, allowing for the use of many modern digital media as scenographic elements. With the steady development of digital arts, particularly digital animation, it has become a key role as a 21st century in presenting their theatrical visions. My own issue is the use of digital Media as an Interactive scenographic element, as evidenced by the design of several spatial environments within the framework of an idea and a dynamic scenario that interacts with the Several Scenes of the theatrical Performances and is displayed on screen walls or dropped on thematic elements, resulting in a type of interaction between them and the Scenic Design. My project includes instances of models exhibiting the link of designs to theme composition on stage, such as works utilized in plays, musical/motion drama, and event performances. The design used music synced with digital animated media designs as a scenographic element to reinforce the overall visual picture. The study paper examines a theory of my own project, in which I offer a dynamic exhibition of full-back digital settings in rhythm with the music, suited to its movement and the character of the performance, to be employed as a Scenographic element at a Proscenium Theater (12W x 10D x 7H).

Keywords: Interactive digital media; Scenography; Digital arts; Screen walls; Scenic design; Digital animated media; Visual picture; Proscenium theater

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1. Introduction

Interactive Digital Media has become a crucial component of the scenography of contemporary theatrical performances. As animated digital images and forms can be used after being prepared beforehand based on the show scenario and then displayed on LED screens or Scenic 3D Objects. Digital technology has given scenography a new concept and endless possibilities such as LED screens for use as scenic elements or sets in a play.

Scenography gained interactive features from digital media that were not possible with conventional methods. Video Projection Mapping (VPM) is a contemporary method of incorporating dynamic and animated digital scenery. Visuals of contemporary media arts may now be presented thanks to animated digital scenography, and these visuals are now the foundation of contemporary theater productions.

Historically, movement on stage was employed to either alter the scene or manually move certain scene components, such as the motion of the clouds, waves, etc. Directors and scene designers profited from the use of mechanical devices and equipment, such as lifts, rotating stages, moving platforms, etc., as the content progressed to create dynamic, changing scenography that responds to the actions of the actors and the happenings of the performance.

Since the beginning of using motion pictures and films as scenography elements, light projection has also been used .This was followed by the employment of video technology starting in the 1960s of previous centuries. The rhythm and direction that movement adds to scenography alters its form and makes it more dynamic and engaging. As a result, it affects the audience and focuses both their attention and emotions. It could be the movement can be in the form of sharp, slanting lines that are going up or down, vertical, horizontal, or radiating. It also has a tranquil, flowing rhythm with curving and flowing lines.

In kinetic performance Shows and modern dance, theatrical lighting especially light projection has taken center stage. In these contexts, projection's limitations are not restricted to actors or dancers; rather, it moves and interacts with the audience like a performer on stage rather than merely projecting light.

Scenography has long used light projection and projected views, typically of the background. An example of this is the "magic lantern," which was introduced in the nineteenth century's 1960s, preceding the incandescent lightbulb. The first attempts at projecting moving images, initially as unanimated animation and then as animated images, demonstrate that the resurgence of projection in modern and contemporary theater is the consequence of both technological advancement and the creation of new techniques for presenting it as a scenographic element (Wilford Oren Parker, R. Craig Wolf, 2014) [4].

The scenography, which conveys signals, messages, and information to the audience, is crucial in validating the show's topic, regardless of whether it employs two- or three-dimensional graphics. Since the turn of the 20th century, projection techniques utilizing projectors and projectors have been employed; however, LED displays are currently used LED It is

adaptable in that it may be utilized in any size or form to show the necessary pictures and effects. Digital display devices that may be directly manipulated during the presentation or set to meet display requirements serve as its guides. Map Projection is another way that projection techniques can be applied to images, movies, or abstract computer technology.

Interactive digital Media as a scenography in my Project is actually visual music, as it includes elements of music in addition to various Visual and aesthetic compositions.

Through my following designs for animated digital scenography inspired by some distinctive musical selections with diverse rhythms and melodies, namely:-

- EUROPA by C. SANTANA
- LA FOULE From playing and arranging music WINTON MARSILAS:
- MALMSTEEN'S Guitar Concerto YNGWIE MALMESTEEN
- "LIBERTANGO For ASTOR PIAZZOLLA: -
- "Destiny" music, written by Egyptian Composer Kamal Al-Taweel

This Study Seeks to Explore the Role of Interactive animated digital media as a scenographic element, within the framework of an idea and a kinetic scenario that interacts with the scenes of the theatrical shows and displays them on LED SCREENS or projecting them onto the scenic elements, which creates a kind of interaction between them and the scenic Elements. My own experience which will be reviewed later shows examples of models that clarify the relationship of designs to the scenic composition on the stage, including works used in dramatic performances, musical/kinetic drama, and event performances. The design relied on music synchronized with digital animation design as a scenographic element to emphasize the visual image.

2. Literature Review

In lots of ways, the use of interactive digital media becomes a part of modern life: education, politics, entertainment, and many other aspects. This literature review aims to collate and integrate studies on the effect of interactive digital media on children and adolescents' behavior, political polarization on social media, and its potential for enhancing collaborative learning.

Chassiakos et al. (2016) described the effects of digital media practiced in children and adolescents and hence requirements in guiding parents and pediatricians about its appropriate usage. It finds that though interactive digital media has potential educational or entertainment benefits, this excessive screen time really exposes physical and mental health to jeopardy [1].

Yarchi et al. (2020) turn their attention to the polarization of social media. Their study provides insight into interactional,

positional, and affective polarization over time. Interactive aspects of digital media shape political discourse and are understood to be in control of echo chambers and filter bubbles, which contribute to increased ideological divides [2].

Gan, Menkhoff, and Smith, (2015) investigate how interactive digital media could continue to impact learning processes among students. Discussed here is the ability of interactive digital computer-based platforms to foster collaborative learning. The findings show that this type of media can facilitate open paths of innovation into educational hubs to motivate and gains information [3].

The research findings can be integrated as: interactive digital media plays a multi-dimensional role in society today. On the one hand, it provides education and collaboration, as seen in Gan et al. (2015). Still, on the other hand, there are challenges, especially on children, adolescents, pointed out by Chassiakos et al. (2016), and political polarization, shown by Yarchi et al. (2020).

Literature review findings further point out certain gaps in knowledge. First, research related to the long-term effects of interactive digital media on children and adolescents, especially within the domains of cognitive and socioemotional development is extremely necessary. Further studies are also required for understanding the dynamics of political polarization over social media and its consequences on democratic procedures and societal integration. Moreover, some research is foreseen in the future into strategies that can be used effectively for taking full advantage of interactive digital media with the view of urging critical thinking and active learning in educational establishments.

This literature review gives the all-round view of the diverse impacts brought about by interactive digital media. There is a need for further research to learn more about its implications for various sectors in society and strategies on how to use the technology both responsibly and beneficially.

3. Terminology

Interactive Digital Media is a communication technique where the user's inputs determine the program's outputs. The program's results are then influenced by the user's inputs. It speaks to the methods by which individuals receive, process, and exchange information, as well as interact with one another.

So elements of interactive media are:

- Moving images and graphics
- Animation
- Digital Text
- Video
- Audio

3.1.1. New Media: They are media through which artistic works belonging to modern arts are produced, including virtual art, computer graphics, computer animation, digital art, interactive art, sound art, internet art, video games, robotics, and 3D printing.

3.1.2. Scenography: It is the spatial environment of the theatrical performance, including platforms, scenic elements, lighting, music, special effects, in addition to the actors and their costumes.

3.1.3. Digital Technology: The definition of digital technology refers to Devices, systems, and resources that use digital technology to produce, store, and manage data are included in the definition. Information technology, sometimes known as IT, is the use of computers to handle data and information. It is one of the major components of digital technology. Digital technology is being used by the majority of organizations to improve customer experience, manage operations, and streamline procedures.

3.1.4. LED Screens: LED is an abbreviation for Light Emitting Diode. Through the transmission of electricity, a semiconductor light source produces a visual display. Different kinds of red, green, and blue diodes combine to form a single complete pixel on an LED panel. This type of pixel is very clear and noticeable from a distance.

3.1.5. Projection Mapping: It is a projection technique to transform surfaces, whether flat or three-dimensional, into a display surface for video, pictures, or movies. These surfaces may be irregular or complex in shape. Using specialized programs, a two- or three-dimensional object is digitally simulated and transferred to the digital program that simulates the real environment. It is possible to the program can interact with the display device to adapt any image to be projected.

3.1.6. Digital Animation: It is the animation of two- or three-dimensional elements using specialized programs made using digital technologies.

Contemporary scenography designers always strive to find a new theatrical image that interacts with the acts of the theatrical show and the audience, which has made digital animation an important role in designing the scenography of all types of theatrical performances in the twenty-first century, whether they are musical performances, kinetic drama, opera, ballet, theatrical play, events, or fashion shows. The displayed or projected material, whether 2D or 3D designs, has become one of the most important theatrical design elements for the designer.

As a result of the rapid developments in the field of technology and science in general and the emergence of the world of digital technology, scenography designers are seeking how to employ Interactive digital Media in theatrical Shows, so that digital Media is one of the elements in creating visual worlds to open new horizons of creativity for Scenographers. Onstage, the goal of digital Scenography is to blend live display with digital media is the most recent technological advancement in the world to establish a new language between the recipient and the showing film, With the technical aspects of digital media , the audience can thus have the largest potential aesthetic impact in terms of images attractiveness and visual effects. Today's modern technology has become an inspiration as it helps to implement ideas that were previously difficult to implement; the recent technological development in the field of digital media has influenced the format of theatrical performances and is no longer limited to the design of scenery and lighting; Thus, it is evident that digital media and Scenographic design are now combined. The designer begins by creating concepts, and then

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contemporary technologies are employed to the greatest extent feasible to provide the audience with the finest format (M.SHAHEEN 2007) [5].

The main Issue in using projection is to visualize and show how the projected images will appear within the given model. So with the help of computers and specialized software .by camera the Video, the specified form and all artwork proposed for projections are filled in the computer memory. The group is then displayed on Visual Display Unit (VDU). The projections are installed one by one on the screen area. Where Computer software allows Adjust the scale Projections and cropped experimentally until the desired effect is achieved. By enabling precise slide preparation and advanced decisions taken by the production team regarding.In the sequence of projections shown, can save significant technical training time the stage (Reid Francis, n.d.) [6].

Scenographic media has evolved to be displayed in a three-dimensional form using light as a basic medium for creating digital elements that have a fundamental role in contemporary scenography. Digital animated media has been used as a basic element in the theatrical scene in terms of interaction between the theatrical scene, performers, and the viewing audience, and this has clearly appeared in many types of theatrical performances. Through many of the most important theatrical scenic designers from the beginning of the twentieth century until now, such as Joseph Svoboda, Robert LePage, Mark Fisher, and others.

One of the most important technologies used to display these digital media are large LED screens LED SCREENS and holographic projection technology Video mapping **(Figure 1)**. The beginning of the use of digital media in theater was in the 1930s through the Czech theater and film director, Emil Františil Burian. Emil František Burian (1904-1959) He was influenced by the German Expressionist director Erwin Piscator Erwin Piscator(1893-1966) and Soviet director Vsevolod Meyerhold (1874-1940) Burian experimented with combining film projection and light projection together in one show, which is considered one of the first experiments with that method in a show entitled "Spring Awakening"For Frank Wedekind(1864-1918) German writer (Mitsi, 2018) [7].

Figure 1. A scene from "Spring Awakening" by Frank Wedekind | Photography | © Korel, Miroslav; Burian, Emile F.The Spring Awakening (1936).

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As Theater director E.F. Burian developed together with Miroslav Korel the so-called "theatregraph", a performance stage with integrated projection surfaces on which films and slides were projected during theatrical performances, establishing a direct visual relationship to the action taking place on the stage. This technique was first used in 1936 for Wedekind's production of "Spring Awakening," and later for Pushkin's "Eugene Onegin," as Denis Babel wrote in his book, "Scenography of the Twentieth Century": Alongside the theatrical research work of Piscator Traugott Müller helped Experiences Burian And Kouril To pave the way for new theatrical forms in which the display screen and colors no longer characterize the stage design. These were replaced by architectural structures, light and projected images **(Figure 2)**. A new civilization of audiovisual communication was born (Media Art Net, n.d.) [8].

Twentieth century Scenic designers such as Robert Edmund Jones envisioned it, Edward Gordon Craig and Adolf Appia considered light as an essential element in theatrical scenography, but the technology at that time could not support their imagination. It would drown the genius of the Czech Scenographer Joseph Svoboda To show the theatrical world what can be accomplished with light (Wilford Oren Parker, R. Craig Wolf, n.d.) [9].

In 1958, it was produced by Svoboda and directed by Alfred Radok Magica Laterna Expo 58 in Brussels was a multi-screen theatrical combination of projected images, kinetic direction of projected films and the simultaneous live performance of actors, singers, dancers and musicians.It was revolutionary in its concept of seamless interaction of live performers with imagesdisplayed (Field, 2020) [10].

Figure 2. One of the offers(Laterna Magica), designed by Joseph Svoboda ,Prague 1958-1961.

Usually associated with a Svoboda With Laterna Magica, as a theatrical concept and theater company back to the beginnings Laterna Magica to EXPO 58 in Brussels, where he presented it Josef Svoboda And stage manager Alfred Radok, along with other collaborators. This performance, which combined the live work of presenters, musicians and

dancers with pre-recorded film, was an extraordinary success at the show. After his return to Prague, a theater with the same name was created Laterna Magica. He has appeared in the Brussels show and has also developed a mix of live stage work and film. It has been shown in many international venues **(Figure 3)**.

It is perhaps the most famous production of Laterna Magika is a Magic Circus (directed by Evald Schorm), which premiered in 1977 and continues to this day. Other notable productions include Night Rehearsal (1981), directed by Anton Massa) – an interesting live broadcast experiment – Odysseus (1987) directed by Ewald Schörm and Graffiti (2002) (Martin Novák, Tomáš Kapic, n.d.) [11].

Figure 3. One of the offers Laterna Magica ""Odysseus" designed by Joseph Svobod.

Josef Svoboda is considered one of the most important Scenographers of the twentieth century in using light projection and digital media in contemporary scenography (Mitsi, 2018) [12].

Svoboda, as a pioneer in the field of multimedia theater, was one of the first scenographers to use digital animation as a scenographic medium and other multimedia in his theatrical performances, such as (The eleventh commandment) In 1950 and "Laterna Magica" in 1958. He used film material for the characters of the play displayed on the screens and created interaction between the pictured characters shown and the real performers on the stage, a method that produced a new theatrical image for scenography of the twentieth century (Krukowski & Santorineos, 2011) [13].

In the first place involves Svoboda style on the development the continuous interactivity between performers on stage and animated designs projected onto scenic elements **(Figure 4)**.

Longer display Laterna Magica the first multi-media theatrical show that combines the display of films, photographs, moving screens and light projection. It consists of movie projectors, one slide projector, and eight moving screens with the ability to rotate, go down, move to the side, appear and disappear.According to Jarka Burian (1927-2005), professor and

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author of modern theatre.

Laterna Magika's show had the ability to produce other shows, as the film shows were specifically developed to comply with each show. After World War II, Svoboda and Laterna Magica's director, Alfred Raddock, produced their first production, taking full advantage of the combination of cinema and theater and the 19th century Czech comedy "re-creation" of Frantisek Samperek (Mitsi, 2018) [14].

Figure 4. A snapshot from an opera shows (Rusalka by Czech composer Antonin Dvorak, at the National Theater in Prague, 1991), with projection screen locations, designed by Jozef Svoboda, 1958.

The moving image has become a new narrative tool on stage, as the display screens, which were an essential scenographic tool, created possibilities for producing new environments in the performance space, to create a unique story and a rare experience on stage (Krukowski & Santorineos, 2011) [15].

Svoboda provided an early version of its polycran screen wall where each screen can display a standalone image, or be part of a large projection assembly (Field, 2020b) **(Figure 5)** [16].

Figure 5. A snapshot from the performance of the opera "Rusalka" by Antonin Dvorak, the Czech composer, at the National Theater in Prague, 1991, showing the locations of the projection screens, designed by Josef Svoboda.

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The use of digital Scenography is not limited to the presentation of a particular style of theatrical performances despite the common use of them in outdoor musical performances attended by thousands of audiences through their basic reliance on large screens with multiple shapes and scales But it has become necessary to rely on digital Scenography in all theatrical performances, including opera performances that are presented with contemporary insights in terms of Scenic design and theatrical directing such as Scenographic Opera Design. "The Magic flute" by Mozart in 2012, produced by the Komische Opera in Berlin.

The production of the German opera The Komische Opera Berlin for the Magic Flute is similar to that of the San Francisco Opera in terms of the sheer size of the digital Scenography. Like the nine screens used by the San Francisco Opera. Komische opera Scenes are entirely projection surfaces, in which case a white wall with six openings and edges placed at several heights (Minnesota Opera 2014) While San Francisco Opera production is limited to visual correlation, however, Berlin's Opera Komische presented the magical flute Scenography based on the full integration of live performance and Interactive digital media in the stage **(Figure 6)**.

Produced in collaboration with Susan Andrade and Paul Barrett Paul Barrett of London's 1927 animation and production studio, the magical flute aesthetic is a reflection of the 1927 visual style, with 2D animation inspired by the 1920s and inspired by the Gothic-themed cartoon by Edward Gowdy. The production hints intensely at the silent film age: The opera's traditional operative dialogue was replaced by text paintings on display, and many characters were reimagined as silent film era characters, including Pamina such as Louise Brooks (1906-1985), Papagino such as Buster Keaton (1895-1966) and Monostatos such as Nosveratto (Vincent, 2021) [17].

Figure 6. A snapshot of Mozart's opera show, on the Komische opera stage in Berlin 2012, illustrated by the use of animated digital designs as a Scenographic medium, Esther Bialas scenery design.

Many modern Scenographer have used Interactive digital Media as a Scenographic Element to direct their designs on stage such as Mark Fisher and Robert Lepage and the theatrical image in the Lepage Scenography is dazzling and creative, which included all digital and mechanical technologies, audio devices and visual effects such as in its 2008 show The Damnation of Faust, where twenty-four quadrants were built vertically to create large romantic images through modern

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technologies including serial videos and light projections with the presence of dancers (Twenty-four dancers perform in their individual quarters like projected curtains) **(Figures 7-10)**.

A scene from Part III of Berlioz's "La Damnation de Faust."
Photo: Ken Howard/Metropolitan Opera

Figure 7. A snapshot of the damnation of Faust show the use of digital animation as a scenographic medium in the theatrical show, scenographic show: Robert Lepage 2008.

Figure 8. A snapshot of the damnation of Faust show the use of digital animation as a Scenographic medium in the theatrical performance, scenographer: Robert Lepage 2008.

He also designed The Scenography was also designed for the Opera Wagner cycle, Der Ring des Nibelungen 2010-2012, where the projection was used in the style of Video Mapping. In 2010, a view of forty-five tons of projector panels was built, twenty-four tons of which automatically moved by computer, where they underwent a digital moving system simultaneously with the projected digital moving system (Poll, 2013) [18].

It is clear that the main feature of Scenography Lepage depends on the automation of theoretical and digital elements in the use of films and images for light projection and as video screenings.

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As for Mark Fisher, The Scenography is designed for all kinds of theatrical performances and one of the most famous is musical performances such as that of the renowned 20th century rock group Pink Floyd, Perhaps one of their most important shows is The Wall 1980 in Berlin, where a huge wall was erected as a light-projection surface and later was resurfaced in 2011, but with the benefit of technological development in contemporary Scenography where, Fisher said, "The purpose of the replay of this show, which has not been implemented for 30 years, was" Recreate the original display, but also to add it using current video technology rather than the 35 mm film view we used in 1980 (S.Marian, 2011) [19].

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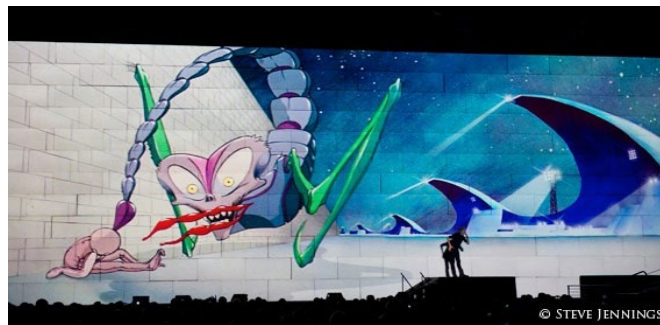
Figure 9. A snapshot of the music show "The Wall" shows the use of animation but with the techniques then available, Cinography Show: Mark Fisher 1980.

Roger Water's "The Wall Live" Tour 2011.

Figure 10. A snapshot of the music show "The Wall" and shows the use of light projection for digital designs, cinography display: Mark Fisher 2011.

One of the most popular theatrical performances that used Interactive digital media as a Scenographic element is the Opera of the Magic Flute designed by Japanese artist John Caneko Jun Kaneko (1942) in 2012 (Bradshaw, 2012)[20].
The screening Scenographgy was presented by two-dimensional abstract graphics that were driven by digital motion specialists . The venue in San Francisco, Canico designed the scenery and fashion for a. three-hour show, where the

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Scenography was presented by the projected motion of the previously painted opera Scenes by John Canica, where the time used to drop the animation took 156 minutes to move on seven screens. Clarke Creative Group, a company specializing in digital animation, blended front and rear projection and used them together at the same time, and made actors perform their roles in front of front projection. As the trigger put it, "Digital action alone is a show in itself." The opera's Scenes began with Canico's graphics, which were characterized by lines that took a spiral shape and direction. It was a challenge for the move team to make those fees move digitally **(Figures 11-17)**. The show was held at the Orpheum Theatre of Omaha Opera where seven projectors were used to capture Scenes in light projection style. The opera story of fairy tales from its most important heroes Queen of the Night/Evil (Nebraska Public Media, 2013) [21].
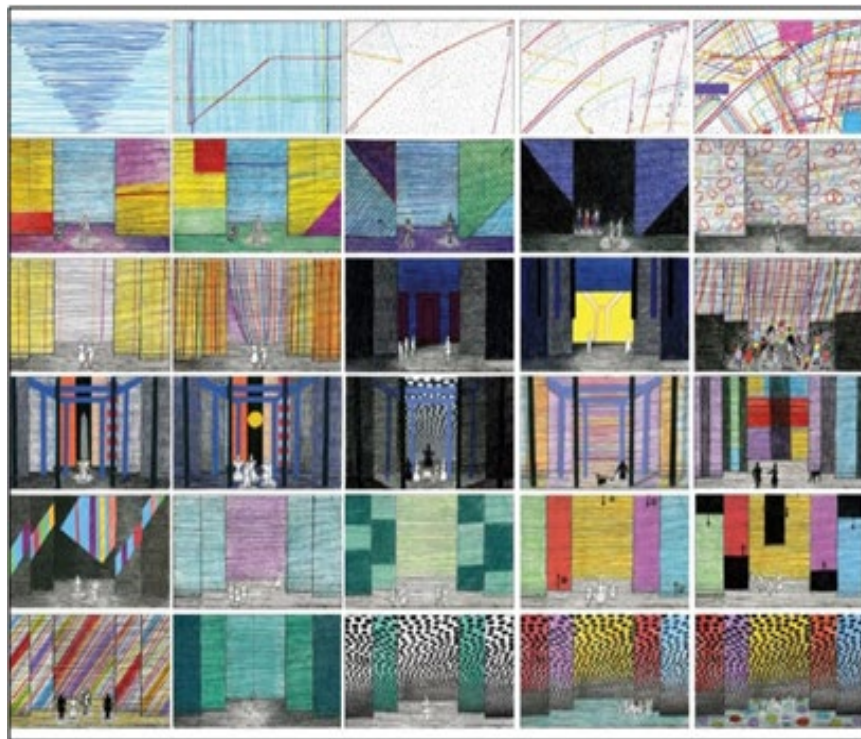
Figure 11. Colored preliminary studies of graphics that will be animated and dropped in views of the Opera of the Magic Flute Show, designed by John Konica 2012.

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Figure 12. A snapshot of one of the views of the Opera of the Magic Flute Show designed in digital motion style, designed by John Konica 2012.

Figure 13. A snapshot of one of the views of the Opera of the Magic Flute Show designed in digital motion style, designed by John Konica 2012.

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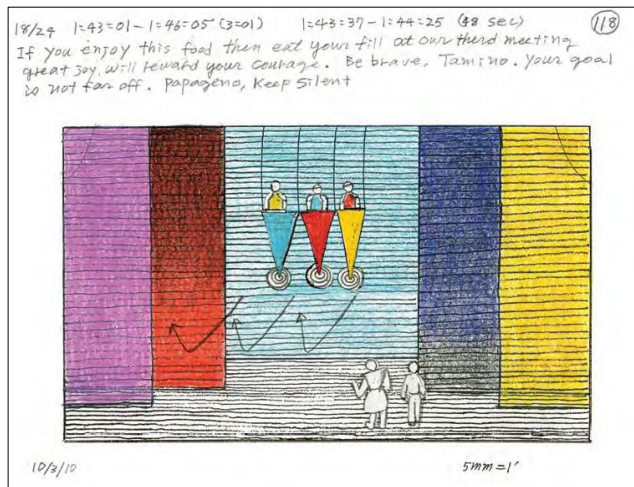
Figure 14. Colorful preliminary studies of projected drawings in the Scenography of Opera Magic Show, Designed by John Conica 2012.

Figure 15. Other colorful studies show design based on abstract lines in the Cinographic Opera Magic Show, designed by John Conica 2012.

Also, one of the best Shows to present Interactive digital media as a Scenography, RHEINBILDER show in Okinoa, 2018. The design of the two-dimensional illustrations is Chiara Ciccarello (CICCABOOM, 2020) [22].

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Figure 16. A snapshot of the RHEINBILDER show representing the use of Interactive digital media as a Scenography, Designer: Chiara Ciccarello 2018**.**
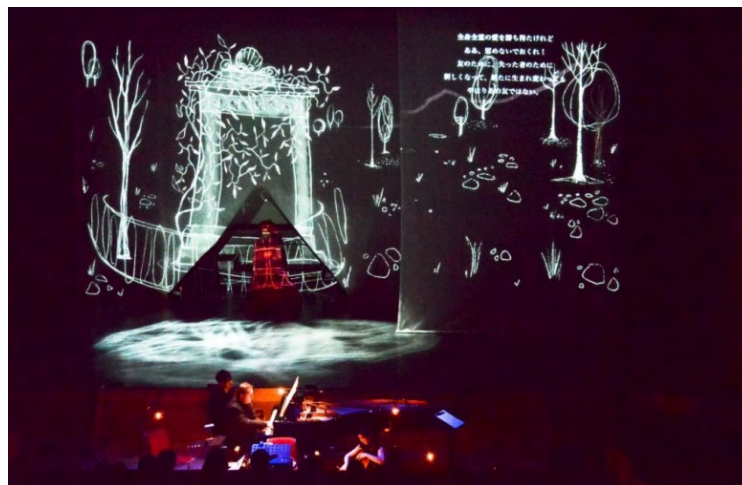
Figure 17. A snapshot of the RHEINBILDER show representing the use of Interactive digital media as a Scenography, Designer: Chiara Ciccarello 2018.

4. The Following is a Presentation of the Designs I have Designed and Implemented

4.1. Design I: Scenography for a Modern Performance Show Inspired by Music EUROPA by C. SANTANA

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The show depends on the nature of the music and its rhythms the Scenography Designs is not related to the music title. The Scenography design is based on the use of LED SCREENS with geometric forms in simple configurations. The digital material used is 3D images that move in rhythms and configurations to paint images in line with music and interact with rhythm variations, musical instrument sounds, the main melody of electric guitar sound and the distinctive style of the famous American musician Carlos Santana.

Color and lighting have had a major impact on the completeness of the final design picture, relying on the combination of warm and cold tones, with reflective surfaces and contacts, which have been instrumental in making the effects I seek to achieve.

To implement these design , I used Autodesk 3ds Max, Adobe Photoshop, and for digital filmmaking software I've used Adobe Premiere Pro and Windows Movie The various screens move according to music and the show's Choreography, where the Scenography that paints animated musical images that interact with the movement and performances of dancers **(Figures 18-24)**.
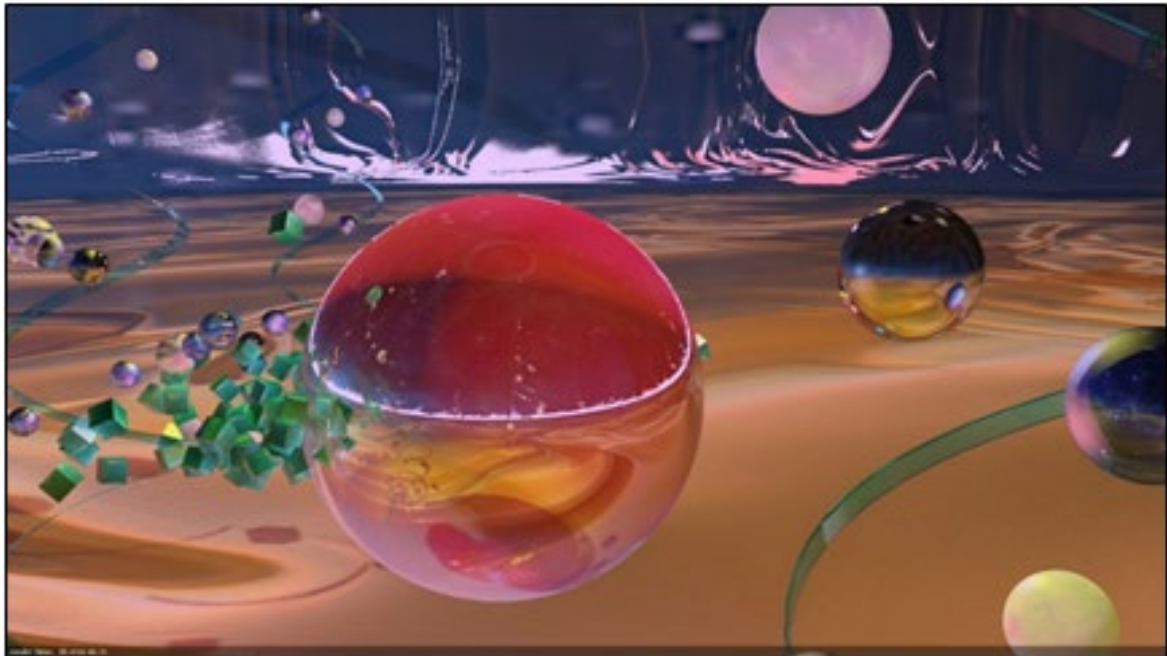
Figure 18. A shot from inside the 3D digital design inspired by Santana's EUROPA music implemented by 3D Max and photoshop designer Riham Hilal.

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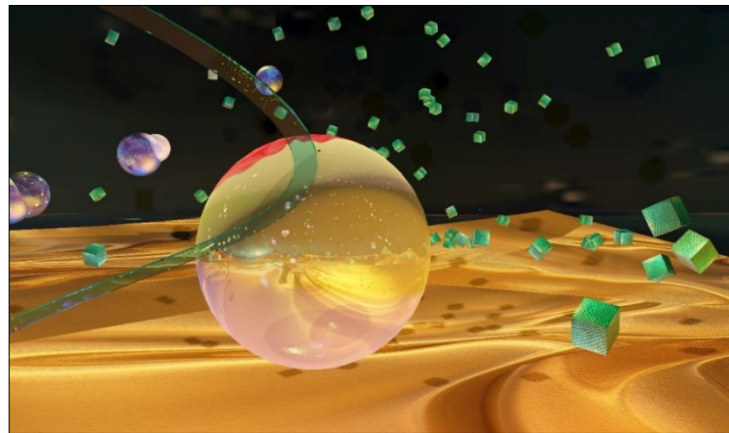
Figure 19. Another shot for the same 3D design showing some aesthetic aspects designer Riham Hilal.
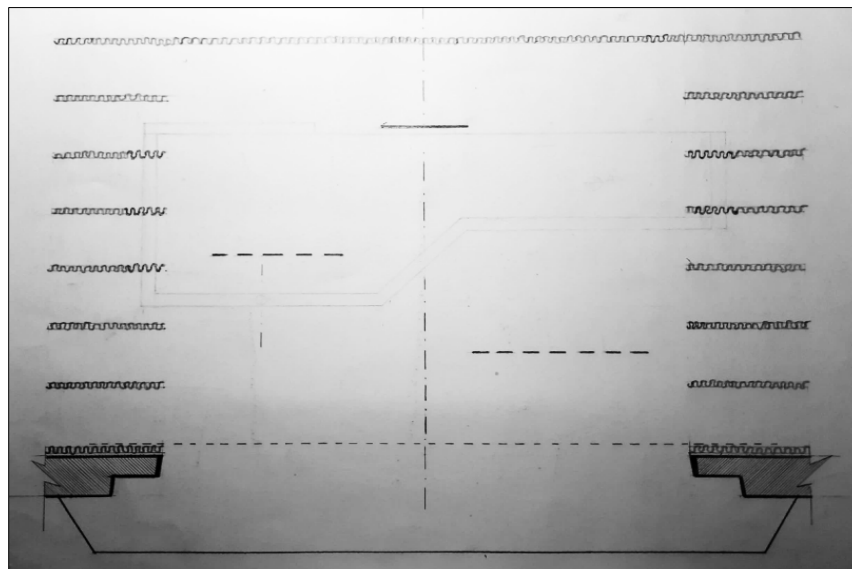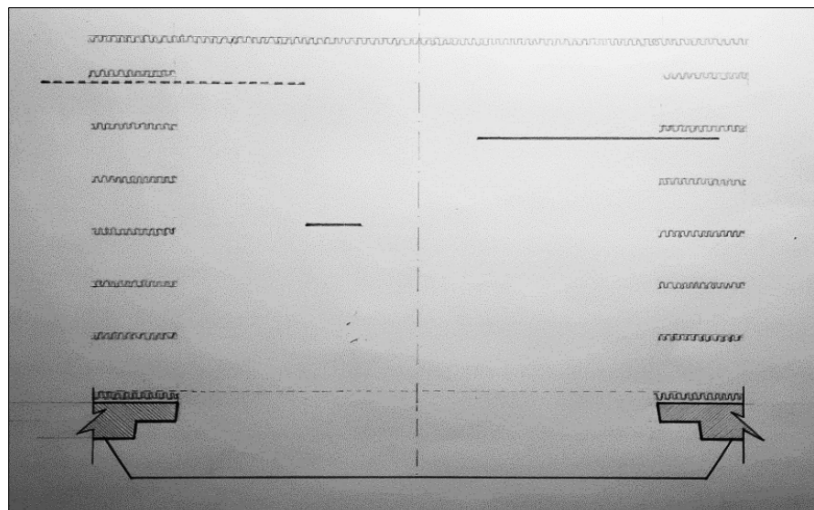

Figure 20. Plan drawing showing the distribution of LED screens onstage with variable dimensions designer Riham Hilal.

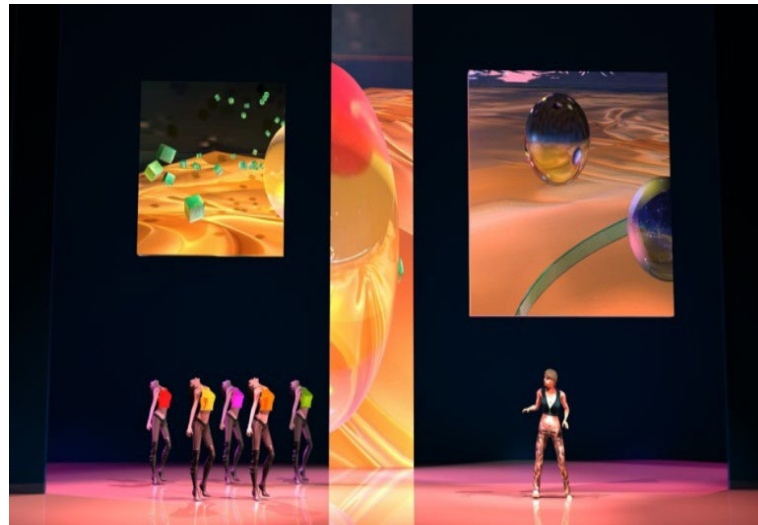**(An Open Accessible, Fully Refereed and Peer Reviewed Journal)**

Figure 21. Digital model of scenography design for the modern performance and motion show inspired by EUROPA music by C.SANTANA – Designer Riham Hilal.

Figure 22. Plan drawing showing the distribution of LED screens onstage with variable dimensions designer Riham Hilal.

Figure 23. Digital model of design for the modern performance and motion show inspired by EUROPA music by C.SANTANA – Designer Riham Hilal
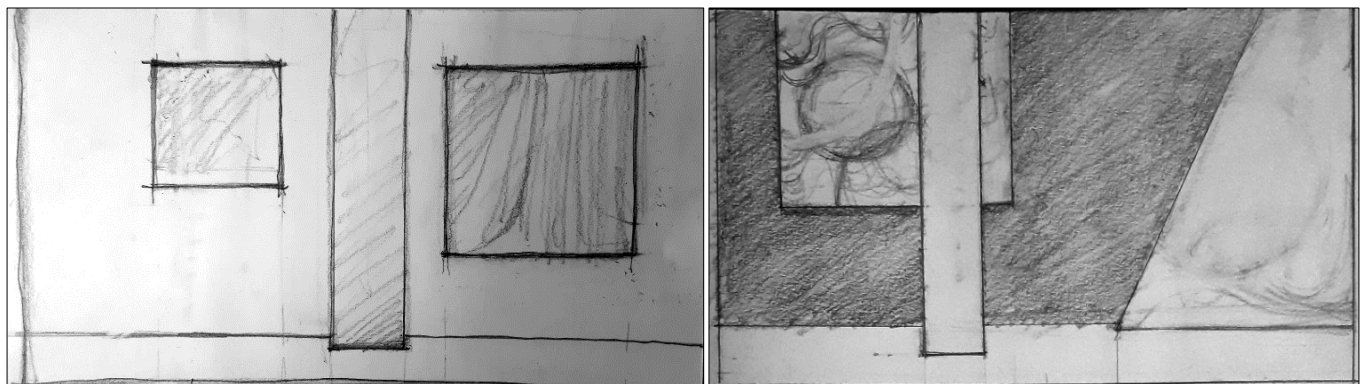
Figure 24. Concept designs for the scenography of the modern performance and motion show inspired by EUROPA music by C.SANTANA – Designer Riham Hilal.

4.2. The Second Design on La Foule Music from Winton Marsilas Music Playing and Distribution

The Show is about painting art and the work of some famous artists, music with relatively fast rhythms based on the sounds of accordion and copper machines "trumpet, sax, and etc."

The movement in its entirety comes alive and offers a live structural show that interacts with the rhythms and sounds of music and the movement of dancers. Some geometric theoretical elements and a circular screen used in parts of the show can be lifted upwards.

I've focused on red, blue and green tones to be the colors of models inspired by flying and streamlined fabrics as if they were swimming in space, as well as warm illuminations on designs that were shined on some cube surfaces to show their different sides **(Figures 25-35)**.

I've Used Digital Software's like Autodesk 3Ds Max, Adobe Photoshop, and Adobe Premiere Pro and Windows Movie Maker software.

Figure 25. A shot from inside the 3D digital design inspired by the music of La Foule, showing the cubes of varying sizes with paintings by Picasso-2017.

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Figure 26. A shot from within the animated digital design inspired by the music of La Foule, which is based on circular shapes of varying diameters and carries paintings from Joan Miro's works, where it mixed in that design between circular shapes and elements inspired by the nature and movement of fabrics carrying with them multiple folds resulting from their fluid movement, a reflective touch was used on those fabrics to highlight the aesthetics of their nature with their contrast and the nature of the circular shapes that surround them from all directions, which enhanced the enrichment of artistic value plastic design – Designer, Riham Hilal.

Figure 27. A shot from inside the 3D digital design inspired by the music of La Foule, showing cubes of varying sizes and paintings by Famous painters - Designer , Riham Hilal.

Figure 28. Digital design inspired by La Foule music, as it relied on two-dimensional geometric shapes of varying areas and various directions, whose surfaces carry paintings by Van Gogh, also blending them with other elements of fluidity and texture similar to soft fabrics flying in different directions lighting here played an important role, especially with the contact of reflective fabrics, as it gave aesthetic and plastic value to the overall image of the design - Designer, Riham Hila.

Figure 29. The digital model for the design of the music show scenography, whose idea revolves around plastic art "Picas so's works", the scenography here relied on the use of an LED screen in the background of the stage to display the digital d esig-ns previously executed on LA foule music - Designer , Riham Hilal.
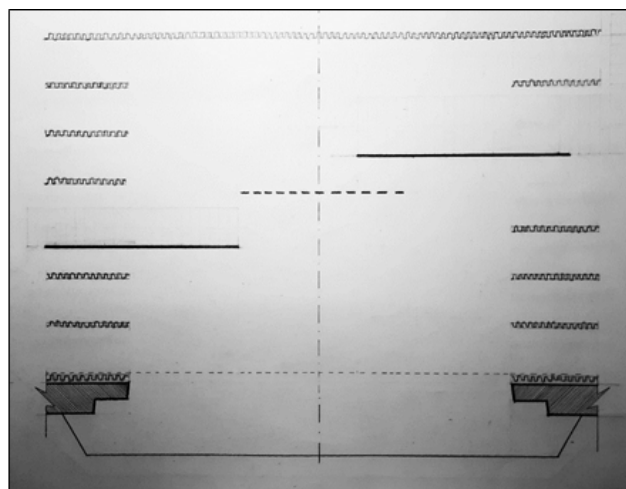
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Figure 30. The digital model for the design of the music show scenography, whose idea based on Van Gogh's painting works, the scenography here relied on the use of an LED screen in the background of the theater to display the digital designs previously executed on LA foule music - Designer, Riham Hilal**.**

Figure 31. The digital model for the design of the music show scenography, whose idea based on "paintings artworks of Miro", the scenography here relied on the use of an LED screen in the background of the theater to show the digital designs previously executed on the music of LA Foule - Designer, Riham Hila.

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Figure 32. The digital model for the design of the music show scenography, whose idea based on "the works of various famous painters", the scenography here relied on the use of an LED screen in the background of the theater to display the digital designs previously executed on LA foule music - designer, Riham Hilal.

Figure 33. Plan drawing showing the distribution of LED screens onstage with variable dimensions-Designer Riham Hilal.

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Figure 34. The digital model for the design of the music show scenography, which its idea based on "Paintings Artwork of Miro", the scenography here relied on the use of two triangular LED screens distributed on both sides of the stage with varying sizes, and in the middle of them a circular screen in the middle holds one of Miro's paintings, the designs displayed move with LA music FAOULE synchronously - Designer Riham Hilal.
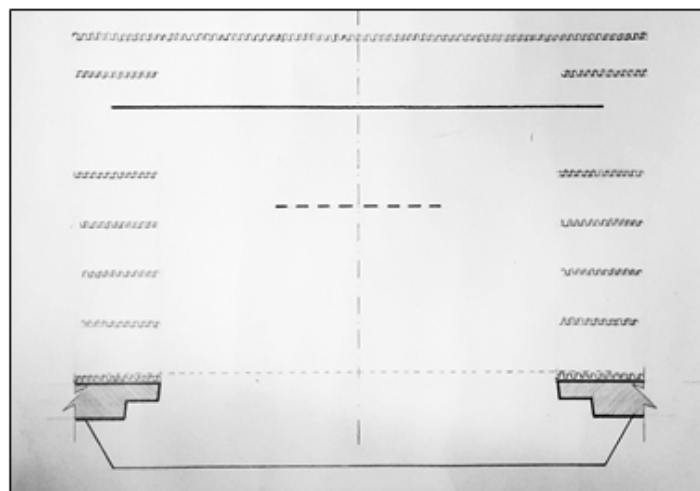
Figure 35. Plan drawing for the scenic design shows the LED screens after Set changing with the same width - Proscenium theater with 12W × 10D × 7H - Designer Riham Hilal.

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4.3. Third design: Digital Animation Scenography Inspired by the Guitar Concerto of Malmsten

It shows a kind of modern classical music to the rhythms of rock and guitar music. His music has strong rhythms and loud sharp expressive sounds. The design of the scenography depends on the use of LED screens with a few levels on stage and the digital elements used are a mixture of abstract designs and some elements in abstract surreal relationships moving and changing, and the movement is strong up to the point of fragmentation and explosion sometimes and may be fluid flexible sometimes. Stereoscopic compositions broken surfaces in some aspects to show lighting in a state of glow in the middle of the design with a gradient faded boundaries to merge with the rest of the lighting projected lighting also moves in harmony and synchronization with the rhythms of music and the movement of digital elements with their continuous changes in their directions, intensity and colors to create glowing flashes of their movement to complement the visual effect that was targeted to provide in the final image **(Figures 36-43)**.

The Software's used in the designs are Autodesk 3ds Max, Adobe Photoshop, Adobe Premiere Pro and Windows Movie Maker.

Figure 36. A shot from inside the animated digital 3D design inspired by the Guitar Concerto for Malmsten, based on abstract shapes and figures that describe nothing,appears to be in a state of explosion and fragmentation as a result of its unusual movement, which is designed to suit the nature and rh-ythms of loud and sometimes sharp music – Designer, Riham Hilal.

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Figure 37. Another shot of the same design as it evolves its fragmentation like movement, inspired by Malmsten's guitar concerto-Designer, Riham Hilal.
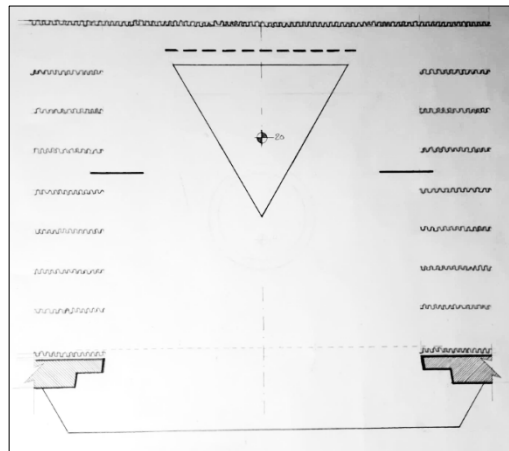

Figure 38. Plan drawing that shows LED screens distributed on the sides and background of the stage with one level in the middle of the stage - Proscenium in 12W × 10D × 7H m -Designer Riham Hilal.

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Figure 39. The digital model of the design of the scenography of the show Scenography is performance show inspired by the guitar concerto of Malmsten, the scenography here relied on a large LED screen with the stage background as well a s a triangular level in the middle of the stage – Designer, Riham Hilal.
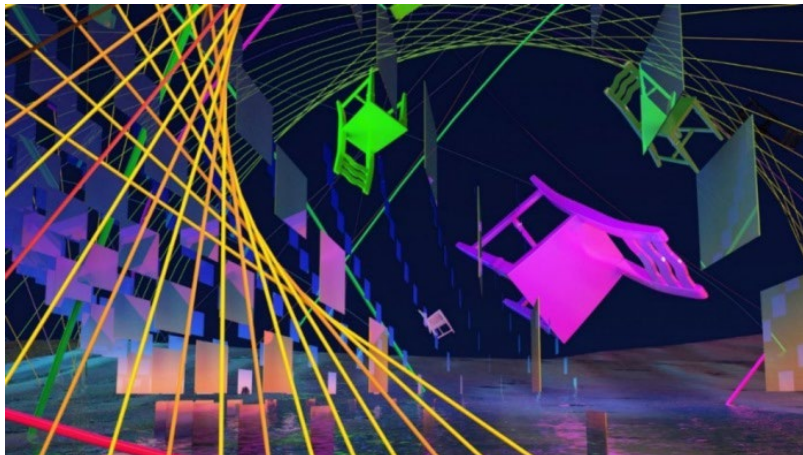
Figure 40. A screenshot from inside the animated digital 3D design inspired by the guitar concerto of Malmsten, the design is based on surreal formations that combine abstract shapes and flowing elements that resemble moving water-Designer, Riham Hilal.

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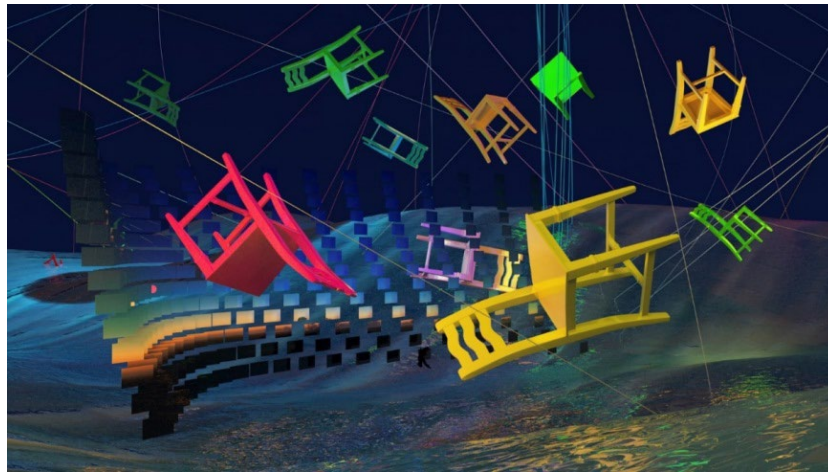
Figure 41. Another shot of the same design shows aesthetic aspects of it, as it is dominated by the surreal character through the nature of the elements used, also relied here on the visual effect resulting from reflections, whether on the water surface or on abstract shapes, and as is clear in the shot, the dynamic state resulting from the collective movement of the elements with the rhythms of Malmstine music -Designer, Riham Hilal.
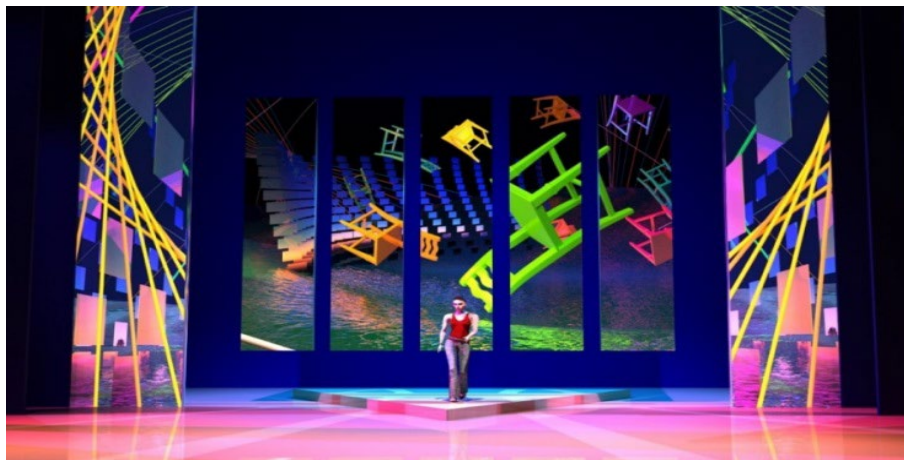

Figure 42. The digital model of the modern performance show scenography design inspired by the guitar concerto for Malmsten, the scenography here relied on changing the large LED screen with other screens five in the background in the middle of the stage, and two screens on both sides of the stage with greater heights while still having the level on stage- Designer, Riham Hilal.
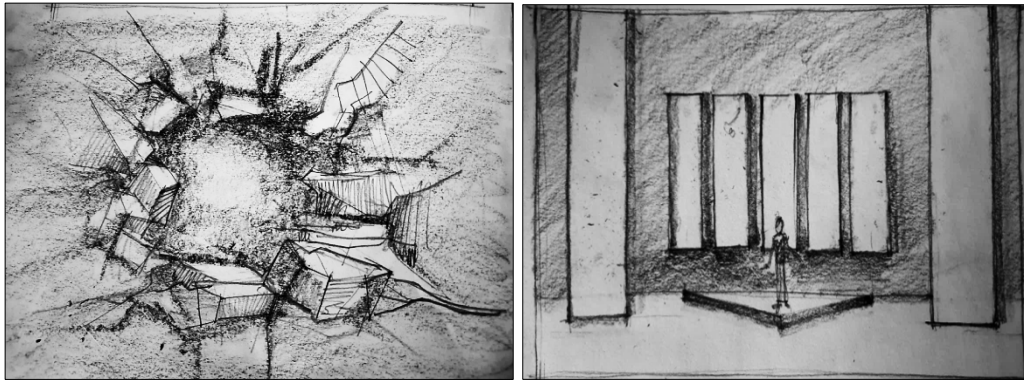
(An Open Accessible, Fully Refereed and Peer Reviewed Journal)

Figure 43. Some sketch studies of the designs of LED screens on the stage and the digital design displayed by them.

4.4. Fourth Design: Digital Animation Scenography for Music Liber Tango by Astor Piazzolla

The Music of Libertango is composed by the famous Argentinean Musician Astor Piazzola and Played by Al Di Meola famous American Music. The design of the scenography is a digital architectural composition that moves derived its movement from the rhythms of music and sounds, and draws in the space various images in terms of composition and lighting. The design is based on the LED background screen and gives the diversity of rhythm in the music changes in the moving images and gives it life and interactivity. The plastic scenographic scene is completed by the presence of dancers on stage.

The Software's used in the designs are Autodesk 3ds Max, Adobe Photoshop, Adobe Premiere Pro and Windows Movie Maker as follows:

Colors and lighting played a key role in completing the overall image of the design, as it relied on cold tones and contacts with reflective surfaces. I used lighting and moved it simultaneously with the movement of architectural elements and formations, resulting in a full-fledged aesthetic state with the dancers in front of it on stage. These designs were displayed on the Proscenium Theater, with scales of 12W × 10D × 7H **(Figures 44-49)**.

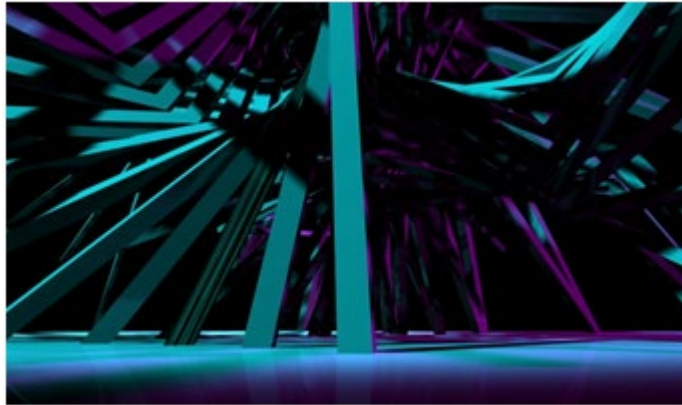**(An Open Accessible, Fully Refereed and Peer Reviewed Journal)**

Figure 44. A screenshot from inside the animated 3D digital design inspired by the music of "Libertango" by Astor Piazzolla, the design is based on a composition of rectangular models that take radiant directions and move with the rhythms of the music, it relied on the colors of the lights that combine blue and violet, whose intensity and directions change sequentially with the music-Designer, Riham Hilal.

Figure 45. Another shot from inside the animated 3D digital design inspired by the music of Astor Piazzolla's "Libertango", shows the change in the lighting condition that affected the Chilean and artistic state of the work, as well as the angle of photography that shows other aesthetic aspects of the composition-Designer, Riham Hilal.
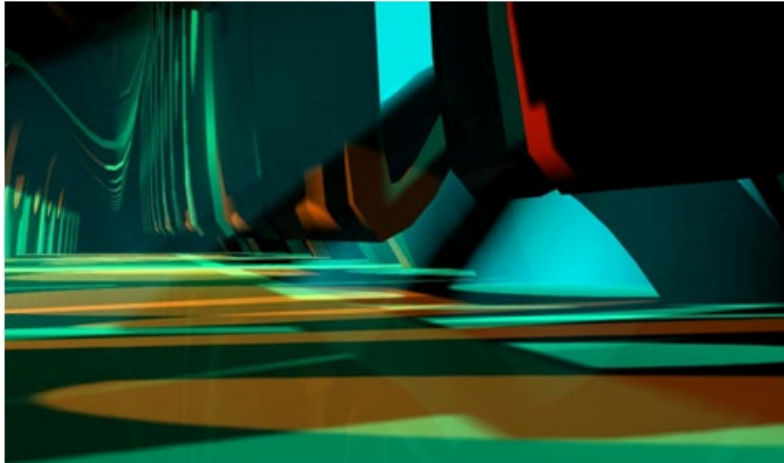
Figure 46. A shot of another aspect of the animated digital design inspired by Astor Piazzolla's Libertango, and it appears as a long corridor interspersed with openings from which very glowing lights penetrate, giving a dramatic aspect to the image that was inspired by the music-Designer, Riham Hilal.
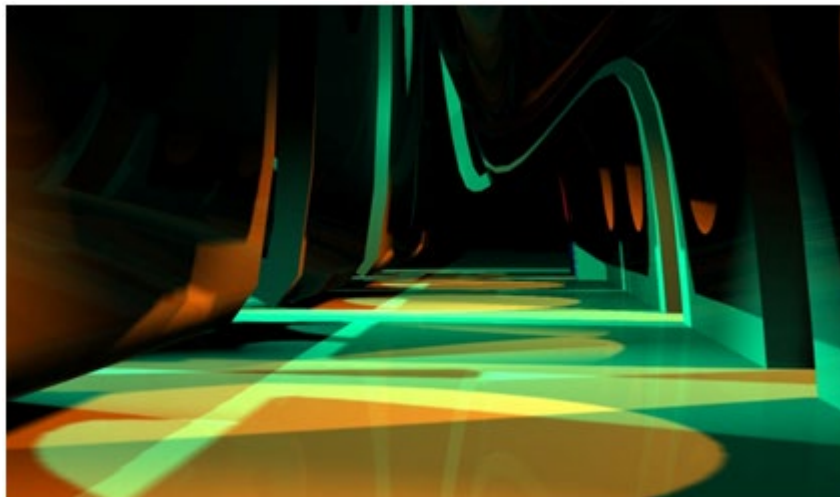

Figure 47. A shot of another aspect of the design in a different lighting mood that highlights the plastic side of the design lines – Design, Riham Hilal.

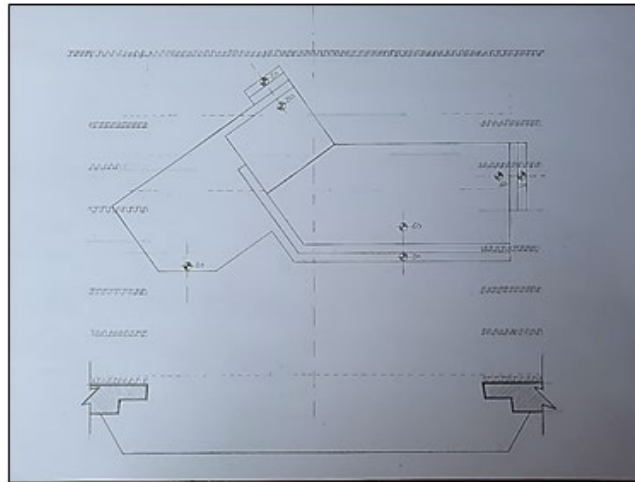**(An Open Accessible, Fully Refereed and Peer Reviewed Journal)**

Figure 48. Plan drawing of the theatrical scene design that relied on a large LED screen in the background of the stage, and a combination with the levels necessary to perform the two dances on it – Proscenium Theater with 12W × 10D × 7H scales – designer, Riham Hilal
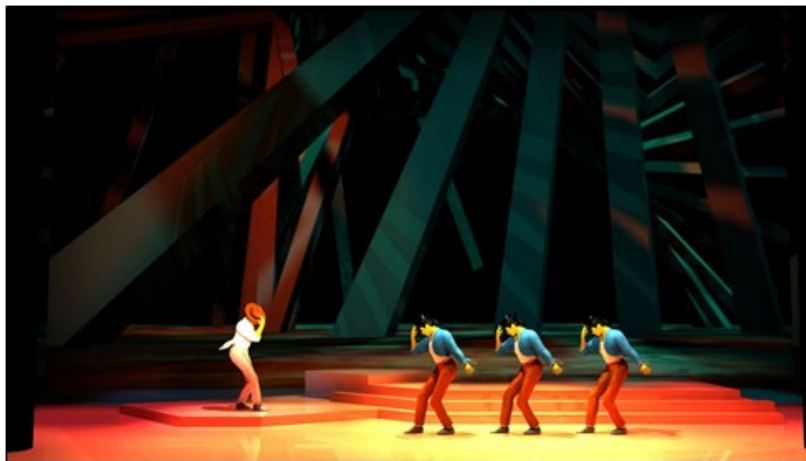

Figure 49. The digital model of the design of the Modern Dance Show scenography inspired by the music of "Libertango" by Astor Piazzolla, where the scenography here relied on the combination of varying levels with an LED screen on the background of the stage, which displays the digital designs previously executed and animated with the music – Designer, Riham Hilal.

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4.5. Fifth Design, Animated Digital Scenography for a Performance Theatrical Show on the Music of "Al-Massir", Composed by the Great Egyptian Musician "Kamal Al-Taweel"

As, there is no Relation between the theme of the film and the theatrical performance Show:

The music, of course, has oriental Egyptian rhythms and melodic phrases. Orchestral instruments and oriental instruments such as qanoon and flute were used; the rhythms are calm, flexible and fluid.

The Scenography Design is based on a triangle in the middle of the stage and is mediated by a door and the background of LED monitors. The triangle is also a LED screen, and the digital images used are flow forms inspired by wave movement and thin air-driven soft tissue, producing formations in soft waves consistent with the rhythms of music. I used pharaoh elements and abstract Egyptian images on the triangle that symbolizes the pyramid **(Figures 50-55)**.

The Software's I used in the designs are Autodesk 3Ds Max, Adobe Photoshop, Adobe Premiere Pro and Windows Movie Maker.

Figure 50. A shot from inside the animated 3D digital design inspired by the music named (Al Maseer) for the Egyptian musician (Kamal El Tawil), relied on the effect of the motion inspired by soft and liquefied waves, sometimes quiet and sometimes violent. It used one yellow color to show the shapes on its surface during motion and also helped use the variable lights on it – Designer, Riham Hilal.

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Figure 51. Another shot from the 3D digital design but using other elements inspired by the nature and movement of fabrics with gravity that fall flexibly and streamlined as the streamlining of eastern melodic sentences with fate music as if it were a machine that played them - this movement added visual aesthetic value to audible music – Designer, Riham Hilal.
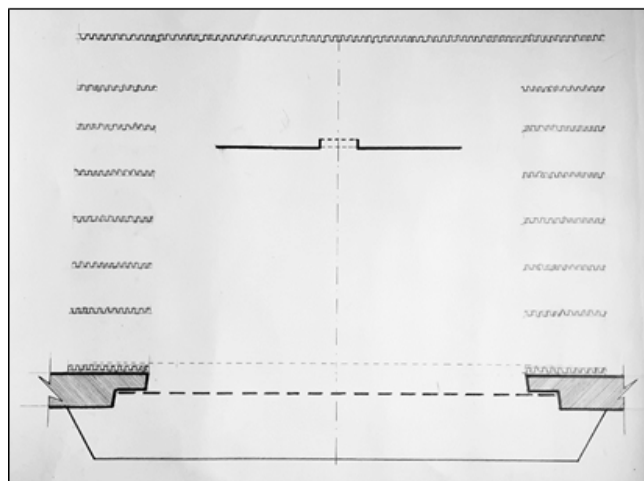

Figure 52. Plan drawing for the scenic design, which relied on a triangle-shaped LED screen in the middle of the Stage with a gate behind it another large screen to display pre-designed digital designs – Designer, Riham Hilal.

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Figure 53. The digital model of the Scenography design for the performance show inspired by the music Al Maseer of the Egyptian musician Kamal El Taweel, the Scenography here relied on the triangular shape of the front LED screen and formed the gate with which the rear projection appears, blending inspired abstract paintings of ancient Egyptian art with moving digital designs in the background screen.

Figure 54. Another shot of the same Show in the appearance of changing the moving digital designs displayed by the LED screens relied here on the only color in the front screen that played a role in highlighting the aesthetics of the yellow moving digital designs in the background screen. To complement the Scenographic image with the presence of dancers in front of the screens- designer, Riham Hilal.

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Figure 55. Another snapshot shows a different state of the projected digital designs on the triangular screen, where the nature of the designs added different aesthetic values to the Scenography through its relationship with the display design creating integration between them as well as using blue in the rear screen to focus the attention of the audiences on the front screen at that time of the performance and music.

The designs in their entirety are a demonstration of the value of digital moving as a Scenographic element and how it employs dramatic, aesthetic and formative theatrical requirements, as well as the interactive value that adds to the theatrical Performance and affects Audiences.

5. Results

Through my Project in discovering the role of digital animation as a Scenographic element and its impact on the Whole Scenic image in Performance Shows in the 21st century, I can state some results I've reached as follows:

The use of digital animation has added aesthetic and interactive values to the Performance Show that making it more vibrant and influential for audiences.

Digital animation has played a common role to create interactivity between Performers and the Sets and between the whole show and the audiences through visual illusive animated images.

Digital Art has created the Need to it as a Scenographic Element and vital medium in all kinds of Theater shows.

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