The Use of Artificial Intelligence in Algerian TV Channels"An Analytical Reading of how the AL24 News Channel Uses Augmented Reality Technology to Obtain Holographic Content"

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Abstract

This research aims to shed light on the use of two technologies, Augmented Reality (AR) and Holography, as Artificial Intelligence techniques in the media content production. The study delves into the principles, characteristics, and tools of each technology, highlighting the clear differences between them. It examines how the team at Algeria International Channel achieved holographic-like visuals for viewers by employing Augmented Reality (AR) Hologram technology during the coverage of AL24 News for the Mediterranean Games in Oran as a practical application model. The research adapted a descriptive methodology, employing interviews with channel officials. The findings include:

•It is challenging for non-experts to differentiate and identify the technology used in producing integrated scenes on the set, as there is no distinct discernibility between scenes created using Hologram technology and those produced using Augmented Reality.

•Channels can acquire Holographic content by using Augmented Reality technology, as demonstrated by the channel's application.

•The use of Augmented Reality technology only requires a green or blue screen, along with Chroma key control.

The study concludes with recommendations and relevant suggestions.

Keywords: Artificial Intelligence ،Hologram ،Augmented Reality

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Introduction

Discussing Artificial Intelligence is no longer perceived as a technological fad or luxury, but it is gradually becoming a necessity across various fields. From healthcare and education to gaming,

entertainment, and even politics, AI has made its impact, extending its influence to journalism and **media naturally.**

The integration of artificial intelligence technologies in media production has brought about a qualitative shift and a significant revolution in the role of communicators within the media. This has notably affected the quality of media content, which is now delivered with exceptional speed and high quality, often surpassing the capabilities of communication professionals, including journalists and technicians. This is especially evident in the fields of audio-visual media and online platforms.

Among the most highlighted AI technologies in this article are hologram technology, virtual reality, and augmented reality. Each of these technologies has its own advantages and justifications for use, with cost considerations and the technical expertise required for control and implementation being crucial factors.

This article examines a new usage model adopted by the international channel of Algeria, AL24 News, along with other Arab and international channels that aim to distinguish themselves with high-quality content. The focus is on the use of augmented reality technology, a low-cost approach that only requires a green screen and proficiency in Chroma technology. This enables the creation of mesmerizing holographic content, which would have otherwise necessitated advanced laser technology with higher costs.

The article explores how AL24 news utilized augmented reality in covering the Mediterranean Games in Oran, Algeria, to generate holographic content. This is achieved through an interview with the channel's director, Mr. Salim Akar, and a scene-by-scene analysis of the usage, without delving into the specific content. The goal is to understand the successes and failures of this experiment, taking into consideration the novelty of using such technology on television sets and the recent establishment of the AL24 news channel itself.

Hence, our objective is to explore how the Hologram technology was employed in the coverage of the AL24 News Channel for the Mediterranean Games in Oran. This will be accomplished through interviews with the technical team of the AL24 News Channel, investigating the conditions and intricacies of its usage. Additionally, this will be compared to the practices in the Arab and international channels based on the articles and scientific references that have discussed the topic, albeit sparingly due to the recent adoption of this technology in television.

Research Methodology:

This study belongs to the theoretical analytical scientific research, relying on knowledge and information that has been minimally addressed on the subject. Subsequently, an analysis and development of this knowledge is conducted after deconstructing it through interviews, in order

to study the model of the International Algerian Channel (AL24 News) using the descriptive-analytical approach.

Research Hypotheses:

1. Distinguishing between produced content cannot be achieved through the use of Hologram and Augmented Reality technologies.

2. Television channels can, by using Augmented Reality technology, acquire audio-visual content identical to that of a Hologram-produced content.

3. The cost of employing hologram technology is significantly higher than the cost of using Augmented Reality technology.

Research Objectives:

The researcher aims, through this study, to achieve the following objectives:

•Understanding how the International Algerian Channel (AL24 News) utilized Augmented Reality technology as the first Algerian channel, considering its novelty, to incorporate this technology.

•Investigating how the channel obtained content that appears Holographic to the audience using Augmented Reality technology.

•Monitoring the added value in terms of quality that the channel gained from using Augmented Reality technology.

•Clarify the importance of using both Augmented Reality and Hologram technologies, as forms of Artificial Intelligence, in television channels as a means of innovation to enhance the quality of television programs and enable them to compete.

Artificial Intelligence: The Technological Boom in Newsrooms

Certainly, the integration of Artificial Intelligence (AI) has brought about a technological boom in newsrooms, transforming various aspects of the journalism industry. These advancements highlight how AI can improve newsgathering, analysis processes, and enhance the quality of journalistic reporting while improving interaction with the audience. However, it is crucial to use this technology cautiously to ensure the accuracy and objectivity of news, avoiding unwanted biases. The ethical use of AI in journalism remains a critical consideration as the industry continues to embrace these technological innovations.

Hologram Labelling Connotation:

Holography, or three-dimensional imaging, is a unique technology that relies on lasers, enabling us to recreate images or three-dimensional objects with high precision and quality. The

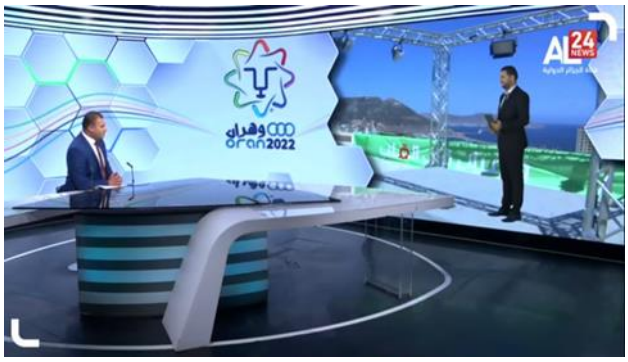
Hologram is the product of holography, and the origin of the word is derived from the Greek words 'holos' (meaning whole) and 'graphein' (meaning to write), signifying a complete image.

Harber (2010) defined it as a technology resulting from three-dimensional imaging, through which a three-dimensional Hologram is generated. The process involves the use of laser beams that create light reflected in space through holographic imaging. Through this process, we obtain the Hologram[1] . While, Blanch, Bablumian, and others defined holography as "a technology used to display objects in three-dimensional form, allowing them to be seen by the human eye in the same way a person sees everything with their own eyes in the surrounding environment[2].

The History of the Emergence of the Hologram Technology:

After being a science fiction dream in the novel by the writer Jules Verne in 1893, holography has now become a tangible reality that we witness daily through programs and technologies used in various fields[3].

Holography technology was first discovered in 1947 by scientist Dennis Gabor while conducting an experiment to improve the magnification power of the electron microscope. Due to the limited availability of light sources at that time, which were not coherent in their wavelengths, he did not achieve satisfactory results. Following the discovery of lasers in 1960, considered the purest form of light to date, scientist Emmett Leith was able to present the first Hologram in 1967.



How Does a Hologram Work?

Here is a simplified explanation of how holograms work[1]:

1. Coherent Light Source: Holography requires a coherent light source, typically provided by lasers. Coherent light means that the light waves have a consistent frequency and are in phase, maintaining a fixed relationship to each other.

2. Splitting the Beam: The laser beam is split into two separate beams - the reference beam and the object beam. The object beam is directed toward the object being recorded, and the reference beam is directed onto a recording medium.

3. Recording the Interference Pattern: The object beam reflects off the object, and its waves interact with the reference beam on the recording medium. This interaction creates an interference pattern—a pattern of alternating bright and dark fringes—on the recording medium. The interference pattern contains information about both the amplitude (intensity) and phase of the light waves.

4. Capturing the Hologram: The recording medium is typically a special photosensitive material, such as holographic plates or holographic film. This material captures the interference pattern and stores it.

5. Reconstructing the Image: To view the hologram, coherent light (often from the same type of laser used during recording) is shone onto the holographic plate or film. This coherent light interacts with the recorded interference pattern, reconstructing the original object waves.

6. 3D Image Formation: The interference pattern, when illuminated with coherent light, recreates the original light wave fronts. As a result, the viewer perceives a 3D image that appears to float in space, complete with parallax and depth cues.

The Tools Needed to Make a Hologram:

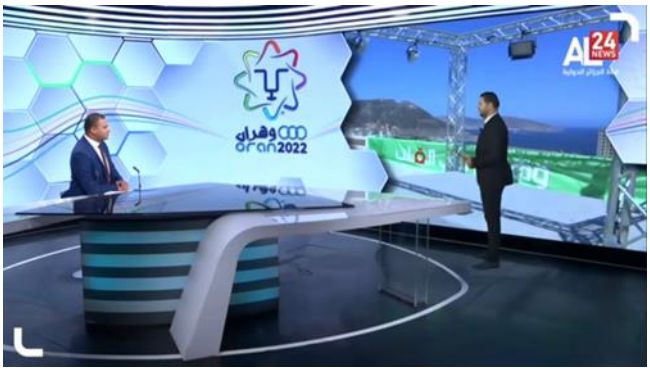
•**The laser device,** responsible for producing laser beams, has the characteristic of a single frequency. One of its key features is that when the laser beam is divided, the power of the divided part equals the power of the main beam. It is a crucial element in the hologram production process.

•**Lenses** play a role in dispersing and diffracting light over the area of the object intended to be imaged.

•**The holographic film,** a raw film that aids in hologram production, records the image due to its layer of light-sensitive materials. This film is placed on the light entrance surface.

•**A beam splitter** is a mirror that allows a portion of the light to pass through and reflects the remaining portion onto the holographic film, separating the beam into two.

-A completely reflecting mirror reflects and directs the laser beams reflected from the beam splitter to the object intended for imaging or reflects the laser beams passing through the beam splitter onto the holographic film.



Areas of Hologram Use[1]:

1. Health: In the field of healthcare, holography has shown promise and found applications in various areas. These applications demonstrate how holography contributes to advancing healthcare by improving visualization, diagnostics, education, and patient engagement. As technology continues to evolve, holography is likely to play an increasingly significant role in various aspects of healthcare delivery and innovation.

2. Education: It can be used as an educational tool to clarify specific shapes and models, enhancing understanding and interaction, especially in the fields of history, space, medical and military sciences. It can also be utilized for remote lectures in higher education, allowing a single lecture to be delivered to multiple universities simultaneously, reducing travel and attendance costs.

3. Tourism: The use of holography in tourism has the potential to revolutionize the way travelers explore and engage with destinations, offering more immersive and educational experiences. As technology continues to advance, we can expect further innovations in this area.

4. Marketing and Advertising: Holographic Advertising Displays: Businesses use holographic displays to create attention-grabbing advertisements. These displays are often used in retail environments and trade shows.

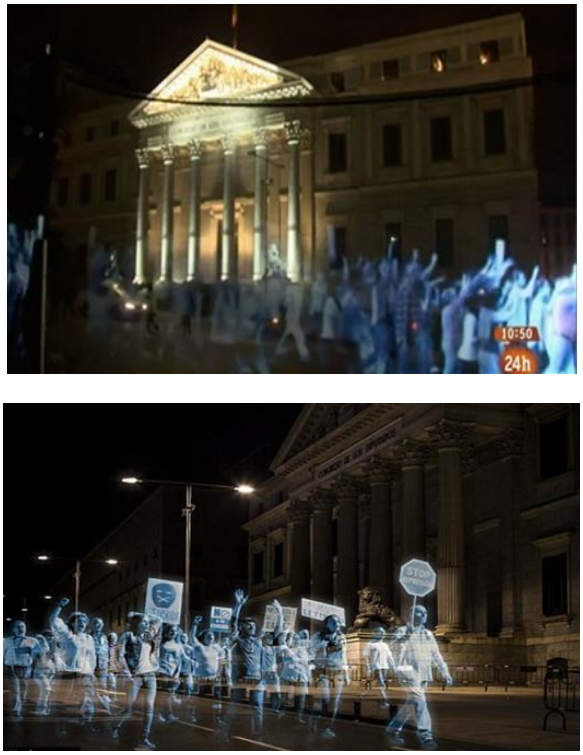
5. Games and Entertainment: Japan proposed a mesmerizing use of hologram technology during its bid to host the 2022 FIFA World Cup. They suggestedbroadcasting matches in other countries using holographic technology, allowing people to watch the real match simultaneously in multiple stadiums and countries.

6. Politics: Many politicians have used hologram technology during their election campaigns, appearing in multiple campaign gatherings simultaneously.

Holograms for Freedom

In a peculiar use, the organization "Holograms for Freedom" conducted a holographic protest in 2015. They showcased a group of virtual Spanish protesters in front of the Spanish Parliament

building, circumventing the law that prohibits gathering without prior permission, as a protest against the "Citizen Safety Law." The scene appeared as if they were virtual protesters, resembling ghosts, demonstrating in front of the parliament. The organization commented that hologram technology would allow citizens to express themselves freely without fear or constraint from imposed laws.



Source : https://www.youtube.com/watch?v=Il43Eq2Igxo

OumKalthoum Party[1]

It is not merely a technological luxury that this technology may be available in smartphones in the future, allowing anyone to communicate with another person as if they were together in the same place, unlike current video-chats[2].

Hologram Characteristics:

Holograms possess numerous features that make them a suitable option for use in various fields. Here are the most important ones:

•The Hologram can be viewed from any angle, appearing as a three-dimensional object.

•Viewing one side of the Hologram can conceal the other side.

•It does not require any display screen and can be projected in any three-dimensional space.

•Multiple holographic images can be recorded on a single spatial board.

•Viewers do not need special glasses.

•The display can be replayed several times.

•Conversion of two-dimensional images into three-dimensional ones.

•The three-dimensional image can be enlarged for better

•**Interactive Experiences:** Holographic displays can be interactive visibility.

Advantages of Hologram[1]:

•**Realistic 3D Visualization:** One of the primary advantages of holograms is their ability to create realistic, three-dimensional images. This allows for a more immersive and engaging viewing experience compared to traditional two-dimensional images.

•**Depth Perception:** Holograms provide depth perception, allowing viewers to perceive objects and scenes in three dimensions. This depth adds a level of realism and detail that is not achievable with standard images or displays.

•**Interactive Experiences:** Holographic displays can be interactive, allowing users to manipulate and explore virtual objects in real-time. This interactivity enhances engagement in applications such as education, training, and entertainment.

•**High Information Density:** Holograms can store and convey a large amount of information in a compact space. This is particularly beneficial in applications like holographic data storage and medical imaging, where detailed information needs to be preserved.

•**Innovative Advertising and Marketing:** Holographic displays attract attention and create memorable experiences in advertising and marketing. Brands use holograms to showcase products, convey messages, and create visually stunning campaigns.

•**Scientific Visualization:** In scientific research and engineering, holography allows for detailed visualization of complex structures, helping researchers study phenomena such as fluid dynamics, material properties, and more.

•**Virtual Telepresence:** Holograms can be used for virtual telepresence, allowing individuals to appear as holographic projections in remote locations. This has applications in telemedicine, business meetings, and virtual events.

Disadvantages of Hologram:

•Usage in media manipulation, fake news, propaganda, spreading rumors, and fabricating events.

•Bypassing the law, as seen in the virtual protest organized by the 'Holograms for Freedom' organization in front of the Spanish Parliament. This protest opposed the Spanish government's

bill known as the 'Citizen Safety Law' by displaying holographic images of protesters, thus skirting the law in what was considered the first holographic protest in history.

•High financial cost for large-scale applications.

•Difficulty in universal usage due to its reliance on precise and highly advanced technology, as well as the need for high-quality internet with speeds reaching up to 20 megabytes per second.

The Use of Holograms in the Media:

Like other fields such as education, medicine, archaeology, and tourism, holographic technology has been utilized in the field of media.

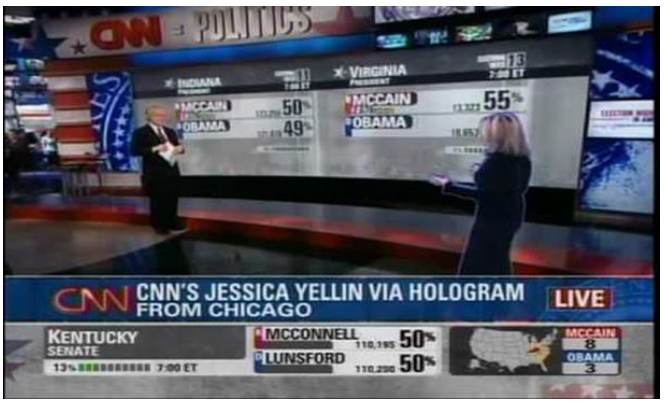
The Importance of Using Hologram Technology in the Media:

Therefore, the significance of the technology lies in its various forms of benefit to the field of media and communication:

•The ability to bring famous personalities and resurrect the deceased back to life. (Pradeep Kalansooriya, AshuMarasinghe&K.M.D.N.Bandara. (2015). Assessing the Applicability of 3D Holographic Technology as an Enhanced Technology for Distance Learning, The IAFOR Journal of Education, Technologies & Education Special Edition)

International Models for the Use of Holograms in the Media:

The American channel CNN was the first to use holographic technology during its coverage of the 2008 U.S. presidential elections. The optical bundles transported correspondent Jessica from Chicago to CNN's headquarters in New York. Journalist Wolf Blitzer conducted an interview with her as if she were physically present in the studio. This marked a significant breakthrough in media coverage.



CNN :04/11/2008 https://www.youtube.com/watch?v=thOxW19vsTg

Augmented Reality:

Augmented Reality (AR) is a technology that overlays digital information, such as images, videos, or 3D models, onto the real-world environment. Unlike virtual reality, which creates a completely immersive digital experience, AR enhances the real-world environment by adding computer-generated content. AR is commonly experienced through devices like smartphones, tablets, smart glasses, or AR headsets

Meaning of the Name and Date of Appearance[1]:

The term "Augmented Reality" (AR) refers to a technology that combines digital elements with the real world, enhancing the user's perception of their environment by overlaying computer-generated information. The name suggests the augmentation or enhancement of the physical world with additional digital content. Here is a breakdown of the meaning of the name:

Date of Appearance:

•The concept of Augmented Reality has roots dating back to the late 20th century.

•In 1990, Boeing researcher Tom Caudell is credited with coining the term "Augmented Reality."

•The technology has seen significant advancements in recent decades, particularly with the proliferation of smartphones, improved sensors, and augmented reality applications across various industries.

The name itself encapsulates the fundamental principle of AR technology—enriching the real-world experience by seamlessly blending it with digital information.

The continuous development and integration of AR in various fields showcase its potential to transform how we interact with information and the physical world.

How Augmented Reality Works and Tools Needed:

Augmented Reality (AR) works by overlaying digital information onto the real-world environment, creating an interactive and enhanced user experience. The process involves a combination of hardware, software, and sensory technologies. Here is a general overview of how AR works and the tools typically needed:

•**Smartphones and Tablets:** These are commonly used for mobile AR applications. They have built-in cameras, accelerometers, and gyroscopes, which contribute to the tracking of the device's position and orientation.

•**AR Glasses and Headsets:** Dedicated AR glasses or headsets provide a hands-free experience, immersing users in AR content. Examples include Microsoft HoloLens, Magic Leap, and Google Glass.

•**Cameras:** Capture the real-world environment, allowing the device to understand and interpret the surroundings.

•**Accelerometers and Gyroscopes:** Measure the device's movement and orientation, aiding in tracking its position in three-dimensional space.

•Devices need sufficient processing power to handle real-time tracking, rendering of 3D graphics, and the integration of digital content with the real world.

•**Computer Vision Algorithms:** Analyze the data from cameras to recognize and track features in the real world.

•**Sensors Fusion:** Combines data from various sensors to provide accurate information about the device's movement and orientation.

•**Marker Detection:** In some cases, markers (such as QR codes) are used to trigger specific AR content.

•**ARCore (Android) and ARKit (iOS):** These are popular AR development platforms for building AR applications on Android and iOS devices, respectively.

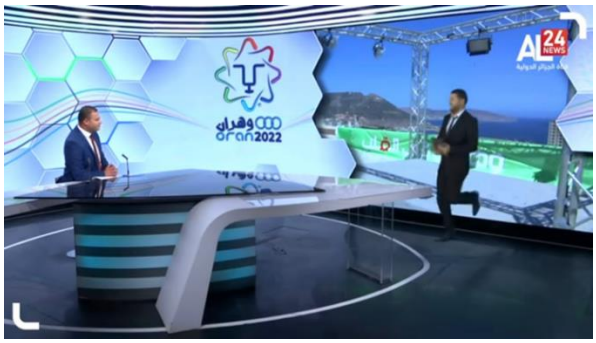
•**Unity3D and Unreal Engine:** Game engines like Unity and Unreal Engine provide AR development capabilities, allowing developers to create immersive AR experiences.

•**AR Authoring Tools:** Tools like Vuforia, AR.js, and ZapWorks allow developers to create AR content without extensive programming knowledge.

•**3D Modeling Software:** Software like Blender or Autodesk Maya is used to create 3D models for AR applications.

•**Internet Connection:** Some AR applications may require a stable internet connection, especially those involving cloud-based services or data streaming.

By combining these hardware and software components, AR systems can accurately track the user's environment and seamlessly integrate digital elements into the real world, providing users with immersive and interactive experiences. The specific tools and technologies chosen depend on the intended AR application and the targeted devices.



Advantages and Disadvantages of Augmented Reality:

1. Advantages of Augmented Reality (AR):

•Improved Visualization: AR aids in visualizing complex data, designs, and structures, making it valuable in fields like architecture, engineering, and healthcare.

•**Enhanced Marketing and Retail:** AR is used for interactive product visualization, virtual try-ons, and engaging marketing campaigns, providing a unique and personalized shopping experience.

•**Remote Assistance:** AR enables experts to provide remote assistance by overlaying information onto a user's view, guiding them through tasks or troubleshooting issues.

•**Increased Productivity:** In industrial settings, AR can assist workers by providing real-time data, instructions, and visual cues, leading to improved productivity.

•**Medical Applications:** AR is used in healthcare for surgical planning, medical training, and enhancing visualization of medical data, improving patient care.

•**Tourism and Navigation:** AR aids in navigation, offering real-time directions, information about landmarks, and interactive guides for tourists.

2. Disadvantages of Augmented Reality (AR):

•**Dependency on Technology:** AR heavily relies on technology, and disruptions such as device malfunctions, software bugs, or connectivity issues can hinder the user experience.

•**Privacy Concerns:** AR applications often involve the collection of user data, raising concerns about privacy and the potential misuse of personal information.

•**Distraction and Safety Concerns:** In certain contexts, such as while walking or driving, AR can be distracting and pose safety risks if users are not fully aware of their physical surroundings.

•**Content Quality:** The quality of AR content can vary, and poorly designed applications may result in a less-than-optimal user experience.

•**Potential for Misinformation:** AR can be used to alter or manipulate information in the user's view, leading to concerns about misinformation or deceptive content.

Areas of Use:

Augmented Reality (AR) has diverse applications across various industries, enhancing user experiences and providing innovative solutions. Here are some prominent areas of use for augmented reality:

•**Education:** AR is used in education to create interactive and immersive learning experiences. It enhances textbooks, provides 3D models for educational purposes, and offers virtual field trips.

•**Healthcare:** AR is applied in medical training, surgery planning, and patient education. It allows for the visualization of complex medical data, aiding in diagnostics and treatment.

•**Tourism and Navigation:** AR aids tourists by providing real-time directions, information about landmarks, and interactive guides. It enhances the overall travel experience by overlaying digital content onto the physical world.

•**Marketing and Advertising:** AR is employed in marketing campaigns to create interactive advertisements, product demonstrations, and engaging brand experiences. It allows users to interact with products virtually.

•**Architecture and Design:** AR aids architects and designers by allowing them to visualize 3D models of buildings or products within real-world environments. It facilitates better design decision-making.

•**Social Media Filters and Apps:** AR is widely used in social media apps for filters and effects, allowing users to augment their photos and videos with digital elements.

Usage in Media:

Augmented Reality (AR) is increasingly being integrated into various aspects of media to enhance user engagement, storytelling, and interactivity. Here are several ways in which AR is used in media:

•**Broadcasting and Live Events:** Television broadcasts and live events utilize AR graphics to enhance storytelling and provide real-time information to viewers. AR elements such as on-screen graphics, data visualizations, and augmented reality sets are used to present news, sports, and entertainment content.

•**Live Performances and Concerts:** AR is used in live performances, concerts, and theater productions to enhance stage effects, create virtual sets, and integrate digital elements into live performances. AR technology enables artists to deliver immersive and interactive experiences to audiences.

•**Journalism and Documentary Production:** Journalists and documentary filmmakers use AR to create interactive storytelling experiences and enhance the presentation of news and information. AR applications enable users to explore data visualizations, maps, and multimedia content related to current events and issues.

•**User-generated Content and Social Media:** Social media platforms and user-generated content apps incorporate AR features such as filters, effects, and stickers that allow users to augment their photos and videos with digital overlays. AR experiences on social media enable users to express themselves creatively and engage with their followers in new ways.

Holograms: Virtual Reality or Augmented Reality?

Gartner institution defines the Virtual Reality (VR) as a new three-dimensional computer-generated reality that is controlled by more than one user through touch and control devices. Virtual reality is a simulation of the physical reality, whether real or imaginary. It involves experiencing life in a virtually non-existent environment, closer to the physical reality, using computer technology devices. Simple tools like glasses and gloves are now accessible to everyone. As for Augmented Reality (AR), it goes by several names such as Mixed Reality, Extended Reality, Enhanced Reality, Integrated Reality, and Enhanced Truth. These are all synonyms for Augmented Reality, which is the most commonly used term. The differences arise from the nature of translation . Baka and others define it as enhancing the real environment by adding computer data,whether text, drawing, or video, to display a three-dimensional image at a 180-degree angle, such as Snapchat images.

Sometimes it is challenging to distinguish between Augmented Reality and the real world. Despite the various types of Augmented Reality and its emergence in various ways, it shares the necessity of having a screen to enhance the view of reality. For example, the Cameroon lion that descended onto the football field at the opening ceremony of the Africa Cup of Nations in Cameroon in January 2022 was seen by people behind the screen as if it were a real occurrence. However, the attendees inside the stadium did not witness it during the opening ceremony. As for the hologram, based on our previous definition as a creation of a new reality within the real world, it is similar to augmented reality but does not require the viewer to use any display screen, glasses, or other means to see the displayed holographic images. In our previous example about the CAN opening ceremony, if the lion had been shown using hologram technology, the audience inside the stadium would have witnessed it just like the audience watching behind the screen.

Therefore, anyone attributing holograms to augmented reality or virtual reality is not accurate. Hologram is an independent technology within the realm of artificial intelligence, separate from the mentioned technologies above.

Algeria International Channel (AL24 News) Model for Using Augmented Reality:

Introduction to Algeria International Channel (AL24 News):

The official website of the channel describes it as a television channel exclusively dedicated to 24/7 news broadcasting from Algiers through the Nilesat satellite.

Algeria International Channel focuses primarily on international news, covering various sections including politics, economy, finance, business, health, agriculture, culture, and sports. As a government-owned channel under the ownership of the National Agency for Publishing and Advertising (ANEP), it was launched on November 1, 2021. The channel represents the Algerian media voice in international affairs. The news content is broadcasted in Arabic, French, and English, with 60% in Arabic, 35% in French, and 5% in English. The priority is always given to information related to international affairs based on the agenda and orientations of Algerian diplomacy.

Equipped with modern studios and facilities that consider technological aspects and contemporary international standards, the channel ensures high-quality audio and visual content. The channel's director highlights the unique features of blending a youngteam proficient in using modern technology in editing, aiming to attract an audience seeking new and innovative content.

This is how Algeria International Channel (AL24 News) obtained Hologram-like content using Augmented Reality:

It is possible to use Augmented Reality (AR) technology and achieve results similar to hologram technology without using lasers, by integrating two studios into one scene. This process is employed by several international channels during coverage of sports events (as an example) or during war coverage (as an example). It was used during the coverage of the Mediterranean Games by the Algerian International Channel (AL24 News) held in Oran, Algeria, in June 2022.

Mr. Salim Akar, the director of the Algerian International Channel, stated in an interview with a researcher at his office that this technology is new and was inspired by international television channels, especially the German ones, and that they are the first African channel to use it. Despite its complexity, the channel's technical team proposed the initiative to the channel's officials, which was not administratively planned, and the idea of experimenting with new technology was adopted just for the sake of change and breaking away from the ordinary (Stylistic exercise).

Although there were no expectations for the success of the idea or the approval of viewers, it ultimately enhanced the quality of the coverage. Despite the channel's recent launch, with less than a year since its inception, the dynamism brought by the young technical team (comprising no more than ten individuals, aged between 24 and 30, with an experience of no more than seven years, the oldest among them) and their ambition for success and excellence were what gave them the idea for the initiative and added value to the program, the channel, and Algerian media.

Those who watched the program believed that hologram technology was used, and it was even discussed by the press as such. However, the reality was different. Slim Aqar explains the process of how the Oran studio was integrated onto the central studio in Algiers. The correspondent stands in front of a wall covered with a green screen to facilitate his movement and extraction from the studio through special effects used by graphics programs for the Chroma technology (incrustation) and integration into the Algiers studio. Chroma is a technique is a technique in video production and photography where a specific color (usually green or blue) is replaced with another image or video during post-production. This technology is widely used for creating special effects, virtual backgrounds, and composite scenes.

The scene begins with the channel's correspondent, journalist Karim Belarbi, making contact with the studio's delegate in Oran to cover the sports event. The journalist, Ramzi Wafi, is located in the central studio in the capital, Algiers. After the correspondent from Oran is welcomed by the journalist in Algiers (in the central studio),the camera reveals that he is indeed in Oran, creating an impression that he stepped out from a stable in one go and entered the central studio in the capital. In reality, he descended into the studio in Oran.

Following this, a new scene is constructed to give the impression that the journalists are in the same studio for an interview. The correspondent then begins answering his colleague's question. For three minutes and six seconds (3:06), the correspondent continuously reads his detailed report. Sometimes he glances at an angle that suggests he is looking at his colleague, and at other times, he reads from his script. Meanwhile, the journalist in the central studio contentedly looks at an angle that implies he is observing the correspondent. He moves his head occasionally, indicating he is following the conversation and sharing it but refrains from responding, rephrasing the question, or engaging in discussion. He simply utters a word like "yes" throughout the use of Augmented Reality technology.

After finishing, the correspondent turns as if he is exiting through the door of the central studio after his colleague says, "I leave you to return to Oran.

Video Link: https://youtu.be/CIIZWaEXkOk

The viewer behind the screen notices that the director used three camera angles, one directed at the correspondent, another at the journalist in the central studio, and the third capturing both of them together to create a unified image on the screen. However, according to the channel's director, who supervised the process, the reality is different.

It is worth noting that neither the journalist in the central studio nor the correspondent indicated the use of any specific technologies, whether at the beginning or end of the conversation. They left the matter ambiguous for the viewer, creating a mesmerizing scene.

Before entering while entering inside the studio

In reality, we are not here to conduct a content analysis of the video coverage, but what matters to us is understanding and analyzing how augmented reality technology was used to create holographic content for the first time on an Algerian channel.

According to the channel's director, the process was carried out with high coordination between the director in the central studio and the director in the Oran studio and their respective teams. They then worked together as one team to produce a unifiedwork simultaneously. The most crucial aspect of all this is the carefully planned venture of broadcasting the work live during the news bulletin.

Regarding the success of the operation without technical errors, the channel's director attributes it to the professionalism of his team and the repeated practice of the new task. Especially important was a specific segment in the process that involved creating an illusion for viewers, the descent from the Oran studio to the entrance of the central studio, a segment that added to the overall astonishment.

As for not using holograms in the process, the channel's director explained that it was due to the high cost of owning this complex technology, primarily based on lasers and requiring significant artistic skills that are not readily available in Algeria. Since it was possible to achieve almost the same result using augmented reality technology with lower costs and effort, the latter was chosen. Furthermore, the director added that holograms are technologies that kill reality, cinema, and media, and it is ethically unacceptable to create a deceased person to perform on stage for entertainment. He emphasized that his channel will not use such technologies and programs out of respect for professional ethics and societal norms.

Through our frame-by-frame analysis of the operation, the following observations were recorded:

•According to the technical team, the most crucial aspect of the operation was the flawless descent of the correspondent to the set and his exit without any delay or errors, attributed to repeated training.

•There is uniformity in the size of the integrated scenes in one set, where the correspondent does not appear taller or shorter compared to the journalist in the central studio.

•There doesn't seem to be a distinction in terms of lighting in the integrated scenes, as both appear to be exposed to the same lighting. The technical team's choice might be due to experimenting with the operation during the midday news bulletin, and it is unclear how the experience would have been at night.

•The sound quality is notable, with no delay in answering questions and no interruption in the broadcast, even though the operation was conducted live. The director attributes this to the high internet flow.

•The correspondent's gaze is directed towards the angle that suggests he is looking at the eyes of the journalist in the central studio, rather than addressing the camera that supposedly connects to the audience.

•There was no direct interaction between the journalists, except for the initial question and the correspondent's response. Throughout the three minutes, the journalist in the central studio did not ask any questions and only nodded and said yes, indicating attentiveness.

•The technical team chose a backdrop behind the correspondent featuring an image of the coastal facade of the city of Oran. The image was not of high quality, and without the moving sign behind it, the image would have appeared somewhat static.

•The most significant observation is the movement of the correspondent's clothes due to the wind, which also moves the sign behind him, indicating that the correspondent is outside the studio and has been technologically integrated into the set using augmented reality.

Results:

•Non-specialized viewers cannot identify the technology used in producing the integrated scene in the studio, as there is no distinction between a scene created using hologram technology and one created using augmented reality.

•Channels can obtain holographic audio-visual content using augmented reality technology, and the International Algeria Channel has succeeded in using this to a very high extent.

•The use of hologram technology requires expensive laser-based technological means and high-tech proficiency, while augmented reality technology requires a large green or blue screen with chroma technology control.

Recommendations:

•Generalizing the use of hologram technology across all Algerian public and private channels to contribute to improving the quality of programs.

•Conducting training courses for technicians and journalists working in Algerian television channels to ensure optimal use of hologram technology.

•Encouraging owners of Algerian television channels to invest in artificial intelligence equipment in general, and hologram technology equipment in particular, to provide opportunities for journalists and technicians to leverage them in high-quality technical segments and programs.

•Motivating Algerian journalists and technicians to take the initiative in using various artificial intelligence technologies to enhance program quality and attract viewers.

•Incorporating the teaching of artificial intelligence techniques into the curriculum for media and communication students, providing them with practical training and encouraging them to acquire skills for future use in their field of work. Additionally, providing an educational environment that contributes to the development of university teaching methods by offering modern studios and technological devices that align with advancements in media and communication technology.

Conclusion

As a conclusion, it can be affirmed that AL24 news, the international channel of Algeria, has successfully utilized augmented reality technology, obtaining audio-visual content that is indistinguishable to regular viewers from hologram-produced content, thanks to the implementation of chroma key technology. This accomplishment highlights the potential for both private and public Algerian television channels to follow suit, leveraging artificial intelligence technologies to produce high-quality media content.

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