



Using Artificial Intelligence Technologies in the Media Content Industry Reality and Challenges of Practice

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Abstract:

Artificial Intelligence (AI) represents one of the modern technologies utilized in the field of media, whether related to content generation, text, audio, or visual content technologies. These tools significantly enhance content production. This article aims to present various milestones and changes that the media sector has witnessed, from acquiring information to reaching the public or audience. It reviews the most significant experiences globally and in the Arab world that have applied Artificial Intelligence technology. Additionally, it explores the main reasons and risks associated with implementing artificial intelligence in the media field, primarily relying on the level of Artificial Intelligence used. Media organizations are urged to expand their use of Artificial Intelligence technologies and implement its algorithms.

Keywords: Usage, Artificial Intelligence, Media Content, Audience, Media Organization

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1. INTRODUCTION

Artificial Intelligence applications represent major shifts in modern lifestyle and have created tremendous opportunities to achieve sustainable development goals by reshaping transportation and health, science, and the money market where Artificial Intelligence applications offer innovative solutions especially during crises and faster sharing of knowledge and AI technologies are not far from developing the media industry, It has brought about significant shifts in the media's ability to influence and address public opinion and provided a more intelligent, advanced and accessible tool to communicate the news to the recipient and the audience's interaction. This development includes read, audio and visual media, as well as social and new media networks in general. Artificial intelligence is a branch of computer science that is interested in developing systems and programs that have the ability to think, learn and make decisions independently, in the same way as humans, so that artificial intelligence relies on technologies such as machine learning, natural language processing, image recognition, sound, robots and artificial neural networks.

Artificial intelligence was an important change in the journalism and media profession; As a result of the increasing reliance on intelligent robots that photograph, edit content, linguistic audit, translation, big data handling and so on with greater accuracy and speed than humans, and with a huge production level that exceeds traditional content production levels within a short time of a few seconds. Especially if it comes to digital media through a striking merger, the applications of industrial intelligence have provided data and algorithms that develop and transform them into news stories, and they have been termed multiple terms, for example, the Robot Press or the Journey Rob. Automated Journalism or Algorithm Journalism is the way algorithms are used and through this data automatically forms the organization and readability mechanisms for creating stories. A manifestation of the technological progress that will lead to major changes in the latest development is the manifestation of the structure and working methods of media organizations, as well as a unique case in the collection and writing of news, as well as the preparation and writing of journalistic analyses on different events and issues; Which will lead to important shifts in the concept of information and its characteristics and its mechanisms of impact on society and many news agencies and global press and television institutions have relied on the use of AI models in their daily work by using algorithms to generate automatic news without human intervention, Or rely on automated responses to the public by chatting through robots and checking fake news which has brought about significant changes in their daily production rate of media content and meeting the needs of an audience of millions of people increasingly associated with digital media, They did not work with traditional methods of publishing and distributing, especially on websites, social networks and digital broadcasting platforms. Through this research paper, we will try to answer the problem of changes that the media industry has known by applying artificial intelligence techniques and presenting multiple models in the field.

To answer this problem, the following points will be discussed:

- 1- Concept of Artificial Intelligence (AI)
- 2- The concept of digital media and its main methods.
- 3- Applications of Artificial Intelligence in the media field.
- 4- Implementations of AI technologies and experiences in media content production.
- 5- Key challenges facing AI applications in media.



2. AI (Artificial Intelligence) concept and Digital Media concept and its various methods and types.

2.1 Concept of Artificial Intelligence (AI)

The definition of "Ian Rich" states that artificial intelligence is that science that looks for how to make a computer perform the work that humans perform in a way from them. artificial intelligence aims to understand the nature of a human being and simulate his thinking by making computer programs capable of solving a particular issue, Or make a decision in a situation based on describing that position. or obtain a decision on a case by returning to the various evidentiary processes fed into the programmer. (saad, 2020, p. 202)

The concept of artificial intelligence is associated with digital or electronic devices such as computer, cellular devices or Roberts, and AI expresses the ability of these digital devices to perform tasks associated with smart objects.) (copeland, 2024)

In another context, the term AI applies to systems that have human intellectual processes such as the ability to think - to discover meanings and learn from past experiences. (LASKOWSKI, 2022),

AI (artificial intelligence) can be considered a technology that reproduces and produces human intelligence and develops many capabilities that result from computer software called DEEP LEARNING or in-depth education. (In-depth) which refers to machine learning from the machine itself. In this context, Oracle is known by the American Foundation for deep teaching where to try to understand words more accurately by analyzing data at the highest level of abstraction. (Assad, 2023, p. 174)

Through these definitions, it can be said that artificial intelligence represents the various computer-related programs that emerge from the simulation of the human mind in the execution of all tasks entrusted to it through various software and algorithms. It is used in many areas, such as health, industry, trade, media and other areas. It is one of the last modern technologies that humanity knows and represents its future. To date, its features have not been definitively formed. Is AI a threat?

2.2 Digital Media concept:

Digital media is a set of new digital methods and activities that enable us to produce, disseminate and receive media content, in all its forms through electronic devices, media, connected or offline in an interactive process between the sender and the future ((Ryan, 2020, p. 7)

Digital media or so-called new media is any form of media that uses electronic devices for marketing or distribution and can be created, displayed, modified and distributed via electronic devices, Digital media is commonly used for software, video games, videos, websites, social media and online advertising And even though digital media is part of our everyday culture, However, employers still find themselves uncomfortable replacing their paper advertising with digital marketing services. (houcine, 2015, p. 36)

Digital media is also defined as the collection of new digital methods and activities that lie in the production, dissemination and consumption of media content in its various forms through connected and offline electronic devices (means), and is also a mix of technology media spread around the world. (hasnaoui, 2023, p. 125)

Among them, digital media represents the use of digital technologies and the Internet to access the production, processing and distribution of media content to the public. Digital media includes all multimedia including image, audio, video, text... The term digital media can be said to have a number of characteristics.



- Quick access to the recipient's audience: Digital media content can reach a global audience via the Internet to provide opportunities for interaction.
- Interactive: The audience can interact with, comment on, share and redistribute digital content.
- Personalization: Digital media content can be specialized on the subject and target audience.
- Update: The posted content can be updated simply and quickly, offering an opportunity to improve content and quality

2.3 Digital Media: Methods and Types:

The classification of types of digital media is based on different types of communication techniques, as in the case of traditional media:

- Acoustics: This type includes digital radio stations, podcasts, audio libraries with a database of millions of songs and music, stories... listened to on call
- Electronic Press
- Dialogue forums and blogs
- Personal websites and business enterprises
- Open media (nomadic, new means to accompany the recipient and sender)

These sites, types and methods have made the stage of intellectual diligence that an individual must offer when exposed to electronic information in linking available material on electronic media and the recipient's interaction with it (the public) who can participate in the making, redistribution and dissemination of such content via such electronic media

3. Artificial Intelligence Services in the Media Content Industry and Applications of some AI technologies and experiences in the production of media content.

3.1 Artificial Intelligence Services in the Media Content Industry.

Although the idea of relying on Alia's wording is not new and artificial intelligence applications have provided a remarkable development in the field of information through the use of data and its conversion into news stories through algorithms that contribute to database analysis and thus generate information and find out how it can be incorporated into the context of interactive press stories in which information changes by changing inputs, AI applications in the media sector can be enumerated by simulating human-minded media capabilities and modes of their work in editing content automatically through algorithms that operate without human interference, Across a range of features provided by computer programs both in the field of journalism and digital television broadcasting where AI plays an important role in the production of media content which increases the media's effectiveness in reaching its audience. The following will be showcased for the most important AI applications in the field of media:

- Algorithms:

AI works on a certain logic and thinking by relying on algorithms to automate tasks and works by accessing relevant data. Algorithms are also known as the last "programmed instruction" or "program." According to John McCormick John MACCOEMICK Computer Science from the University of Oxford, the algorithm is nothing more than a characteristic that sets the exact sequence of steps required to solve a problem. (Bilal, 2011, p. 99)



- Automation:

We mean automation in the use of computers and automated devices to reduce the amount of work done by an individual more quickly. Due to the relentless pursuit of increased production, the world shifts towards automation and industrial intelligence, and this label calls everything that works without the individual's intervention, i.e. purely machine programming.

- Simulation in the media:

It is an interactive and dynamic computer software, tailored to a model of information origin, and then formulating experiences by adding audio, image to represent events close to reality. (Al-Najera, 2017, p. 22)

- Augmented Reality:

Technologies that expand the real physical world and add digital elements are 3D images, videos or themes, and unlike virtual reality are based on the true environment. (Al-Shamri, 2021, p. 720)

The VR architecture here is meant to be a complete digital environment with no integration with the real world and no relationship between it.

- Radio and television production:

Through the experiences adopted by many private audiovisual media in the use of artificial intelligence applications we find: (saad, 2022, p. 19)

- The speed of transmission of information to the public accurately and automatically.
- The proper functioning of media organizations.
- Production of automated content.
- Photography using Drone cameras and in-studio automated cameras.
- Use the automatic search feature in huge amounts of diverse information.
- Use of Japanese television broadcaster using artificial intelligence.

In the same vein, the use of AI applications in managing televised media content can predict potentially audience-viewed videos, if AI can regulate and efficiently content, compared to traditional media is a real problem on the ground due to lack of metadata. Content producers compete for creative work that attracts audiences, and to avoid duplication of content on the producer or broadcaster understand audience preferences and behavior through machine learning and predicting potential audience-viewed videos.

- Journalism Automated:

which is known as "robot journalism", relying on natural language generation algorithms that support it into news stories, whether texts of AI applications to automatically convert data or images, videos and data and then distribute them via digital platforms. This technology has gained considerable importance as it is increasingly applied to many news agencies, newspapers and websites, making spikes in news coverage of economic, sports, and weather topics, and in the publication of thousands of news stories. For example, Press Associated produced more by adopting the AI program to write short news stories about economic events, and this app enabled the agency's journalists to full-time write more in-depth articles ((Stray, 2019)



- **Cameraman Robot:**

This is what the camera called the "robot" in being an effective substitute for the traditional photographer within the TV studios. as well as the use of small drones to photograph events Drone Camera and this leads in the future to have the ability to develop robots capable of interacting with their surroundings for imaging, Impartial and professional reporting describing the reality of what is happening in conflict and war centers contributes to and increases the efficiency of news coverage. (yan, 2020)

- **Social media:**

As social media use expands and flourishes at an increasing rate over the years artificial intelligence via algorithms used to recommend content on 2,819 social media has become the subject of increasing scrutiny, Platforms such as Facebook, Twitter and YouTube use machine learning to suggest sample media content and recommend ads that improve user interaction and United States civil society organizations and researchers have expressed concerns that these algorithms could help disseminate misinformation and digital propaganda. (Papadimitriou, 2016)

Facebook's backbone relies on understanding and acquiring knowledge of the behavior of its vast user base via AI applications Deep learning, this technique does not need any specific data and has the ability to understand the context of the image as well as analyzing its contents using definition and text. - Text Deep This technique uses neural networks to analyze words in user posts in order to understand their context and meaning, using their own algorithm, as well as facial recognition technology: Detecting Face to recognize human faces in two or more different images. The site also uses artificial intelligence to counter fake news by using visual scrutiny, reverse image search and metadata analysis such as where the photo or video was taken, "but has difficulties analyzing satirical images or videos due to language manipulation and linguistic and cultural differences. (Ozbay, 2020, p. 540)

- **Personalization Content:**

Digital streaming platforms and social media sites use advanced technologies in building digital platforms so that content is changed by changing consumer behavior, how it searches and displays, and the history of its data and interests. Netflix focuses on displaying content suitable for its viewers. "Recommendations" Based on research behavior on its digital platform, Netflix indicates that thanks to nearly USD 1 billion annually, it provides AI technology to automate content streams and interact with customers, audience data can be converted into effective customer retention and content customization campaigns to create a more personal relationship with viewers. Video viewing sites also use YouTube to contain information at the request of the public, i.e. all information related to the public's needs.

3.2 Applications of some AI technologies and experiences in the production of media content:

Comes in the forefront of smart technologies in media content generation technologies (GAI); Whether text, audio, or visual content, these tools greatly enhance the content creation process. Natural language processing techniques (NLP) are one of the models now used and operate on the basis of understanding, creating and processing human language; The Associated Press, through the artificial intelligence platform Wordsmith, uses that technology in several things: writing summaries of specific



events and events, writing articles in areas where journalists are not available to do so, writing financial reports and summarizing them in accessible language, perhaps one of the most important products of that use being provided to the news agency; Since the beginning of the use of artificial intelligence, the Agency has announced that its ability to cover certain aspects of news has doubled to 10 times, attributing this to its journalists in the "robot" (Press, 2019)

Generative adversarial networks (GANs) are employed to generate or modify visual content, such as: building art drawings, or creating accompanying images of news and articles, but the power of this actual technology lies when accompanied by graphic visual material; It is possible - through it - to create real-life virtual characters who perform the tasks of broadcaster, reporter or even actor, and China's experience may be the first globally to use an "artificial" news anchor, which it said: New China is the broadcaster; It will be available on their screens, websites (24) hours a day, and it is a step that will reduce costs - significantly - at the entire enterprise level. India's OTV channel has also benefited from the same technology that it uses predominantly; in the presentation of one broadcaster; The news is presented in a number of local languages at the same time (Online, 2023), and these technologies are now used to make "content makers" on social media; They have a character, a pattern, a particular style.

Moreover, They communicate - through it - with the public, they address them, and in it - they are predominantly biological - without the public knowing that those who speak and talk to them are not real

Today, a form of this technique is used in film and television production; Deep fake techniques allow directors, film production companies to "install" the actor's face, or to represent another person's body, real or virtual, and the technology generates appropriate facial expressions; according to the scenario; The process that large visual effects companies needed to do was made possible by the film team directly, seeing their products instantaneously (Hsu J, 2023), and applications, such as Runway Gen 2 produce integrated visual footage, this in a photographic manner, and film output through only static texts and images, without doubt; These inputs into the film production process have changed and will change significantly - what used to be done in the recognized production stages, and they are now used in the largest film productions, perhaps one of the closest models we have seen this year: Disney's Indiana Jones in which they have adopted the use of artificial intelligence; So to do a de-aging style to reduce the shape of the actor (Harassing Ford) within the film (Bedingfield, 2023)

- As for operational efficiency and automation applications

New AI applications, each with different tasks and functions, including diversity generated applications using AI themselves to automate specific tasks; through inserted text orders; Media organizations can, for example, insert an order through this application to search their visual libraries, extract any content specified by the means, which relates to a particular subject, or contains certain images; This app automatically sends orders to other smart apps that are themselves, and those other apps do the same, and so on; in order to achieve the stakeholder's primary objective; The app (Auto GPT) came to prominence when a user gave a simple AI script requesting any task they could earn money, allocating a budget of \$100; AI made an automation journey, distributed tasks, through which the machine built the identity, the project's website, then identified suitable products that could be sold through the site, and finally allocated \$40 for marketing; Facebook and Instagram; The company's value today, and within a short period of time, is calculated in days (25) a thousand dollars. (Jacob Zinkula, 2023)



Reuters has developed artificial intelligence called Lynx Insight, which automatically proposes sentences; Based on entered digital data that aims to support the journalist in writing highly numerical-based reports, the app analyzes the aggregate data, and extracts from which the journalist can build his article, (Service, 2023). Sky News also hired AI for Prince Harry and Meghan Markel's wedding show; The Washington Post developed its own (Heliograph), which in its first year wrote (850) an article published in its print and electronic newspaper, Automatically.

- On public data analysis applications:

Artificial intelligence can significantly enhance media organizations' ability to understand their audiences more accurately; Netflix, for example, uses machine learning to recommend shows and films to viewers; based on viewing records, preferences and behavior, which are an important element of the company's success among its competitors; The company claims to save \$1 billion annually; Through these smart algorithms that keep the user; as a participant; Because recommendation algorithms always provide the public with appropriate content for them; Postponing user ops for the platform (Mathur, 2023)The New York Times uses an artificial intelligence system called Blossom, which analyses their entire articles daily, then looks at social media, and determines which of these articles will have a strong performance that day; The recommendation is then made to the editorial team for appropriate content to be posted on the media (Castillo, 2015)

- Among the media experiences in the application of artificial intelligence technologies we find

On the other hand, through artificial intelligence, News Trade was able to publish an earthquake story in Ecuador; 18 minutes before other news organizations could spread the news, and the systems themselves tracked social media activity through which a shooting was documented in San Bernadine, California, and managed to spread the news before any other media organization Therefore, by looking at such models, we can recognize - through them - the importance of AI applications in supporting journalism functions, journalistic content-making, and its essential roles in news story generation; in ways that journalists may not be able to manufacture; contributes to a coherent amount of service to issues and important social events in the Kingdom; If the operational capabilities of artificial intelligence are available in daily press operations, while maintaining control of operations and placing them under human accountability.

One of the uses of artificial intelligence is to create immersive journalistic experiences such as: those related to energy issues, urban development, and environmental tourism in the Kingdom; Audiences are allowed to see these issues and are motivated to engage and participate in attitudes that are conducive to preserving the environment, serving the sustainability goals of Vision 2023 and its acquisitions; Through interactive experiences between the public and the machine's news stories. This is in addition to digital linkages between press institutions and databases available in the Kingdom; Artificial intelligence can analyses social, economic and medical data; To assist press institutions in the oversight function to detect weaknesses and deficiencies in the functioning of government institutions, and to explore figures that reveal problems experienced by certain government sectors, such as the housing, health and financial sector; The availability of figures and data would help build journalistic stories that, in turn, lead the press to activate its mandated functions and help it perform its data-based professional practices This year 2023 saw companies and news organizations compete to develop AI systems in the field of media; In July 2023, Google announced that it was testing a product using artificial intelligence; To produce news stories called



"Genesis"; It can have a significant impact on the writing of press reports, the content industry, the way news is produced and consumed. (Chen, 2023) together in May 2023, the Knight Foundation announced a new initiative called "Artificial Intelligence for the Public Good"; to support the development of artificial intelligence journalism as well as newsrooms and researchers using artificial intelligence; to improve journalistic experiences.

Despite the enormous potential offered by AI, its central role in improving the flow of information its rapid handling of huge amounts of data, and its efficiency beyond human capabilities, AI still fully has the ability to distinguish between what is real and what is imagination and thus talking about the use of artificial intelligence tools such as Chat GPT in journalistic practices may not be the optimal way to employ such a tool in the local press despite its enormous ability to bring data on demand.

3.3 Challenges facing AI applications in the media

Talking about the integration of artificial intelligence into the media content industry leads us to revisit media regulations and regulations, codes of conduct and ethics related to media practices; Especially, codes of conduct on digital media practices in the Arab world and Algeria in particular have not yet lived up to the hoped-for limit of digital journalism practices. and achieving the ethical dimensions associated with accuracy, transparency and credibility, and journalists' full commitment to them achieving full journalistic integrity in handling information and streaming them for digital vessels, social media away from news-reporting practices as well as a marked weakness in digital journalism practices. innovative content industries that advance the prestige of the press, and their functional and constructive roles. Thus, the most important question - at this stage - is the readiness of Arab-language databases, the digital archive of each press organization that can only work through that data, the control of the security of that data, its privacy, the training of editorial teams, journalists and their readiness to deal with advanced programming languages, and digital systems that deal with AI professionally.

On the other hand, editors and journalists must realize that the press industry is no longer the one they were dealing with prior to the entry of artificial intelligence; Skills and daily routines differed considerably from before; Artificial intelligence has transformed the news media industry; by creating new ways of producing, distributing and consuming news content; Traditional journalistic skills should be transformed into digital skills focused on analysis and data handling, understanding patterns and trends, fact-checking across various AI tools, digital visualization industries, data scanning techniques, digital ethics.

The second challenge in the application of artificial intelligence is to comment that the next phase of digital transformation is the qualitative shift in the concept of common communication; From human-to-human-to-human-to-machine-to-machine-to-machine; Communication scientists considered the machine to be a communication tool, not a communicator. In a study published by Seth Lewis and Andrea Guzman, AI shook communication scientists that it made the caller the machine, no longer an instrument as in the past, and the researchers stated that AI in their study performed the communication functions previously performed by humans, including: conversation agents, social robots, and automated writing programmers; Using natural language processor, natural language generation.

Hence the importance of reviewing Marshall McLuhan's theory (technological imperative), which is based on the fact that the means is the message, that the message cannot be viewed independently of the media, that the content of the message, the public influence what the means do, and the nature of the means constitutes societies more than the content of communication. as with TikTok; Users browse it self-form for



the program, and since one of the hypotheses of the theory is that the means of communication is an extension of human senses; Artificial intelligence (robot) - for example - is almost entirely an extension of man; in its form, sensations and actions, not just its senses; The difference between man and machine can be accounted for; In terms of communication in feeling and sensations

4. CONCLUSION

The future of artificial intelligence can be considered in two stages: the near future, up to the year 2030, and the distant future, beyond 2030. In the near future, as mentioned by Jeremy Gilbert, a specialist in digital media strategy at Northwestern University, AI is assisting journalists in gathering, sorting, and analyzing big data. It also helps in adapting news experiences by understanding the changing expectations of the audience based on their digital behavior. Additionally, AI contributes to reimagining the structure and content of stories, using question-answering techniques, similar to the approach seen in ChatGPT.

As for the distant future, beyond 2030, Elon Musk emphasizes the inevitability of artificial intelligence, stating it is more dangerous than nuclear weapons. Consequently, dealing with AI is imperative, and Musk suggests focusing on enhancing human intelligence rather than AI development. It is anticipated that communication through thoughts may become possible with the use of Neuralink's brain implants, allowing for memory storage, retrieval, and even transferring memories to computers after death. One intriguing question arises: Will humans be able to watch their own memories? In an episode of the TV series *Black Mirror*, a character revisited past memories by watching them on television.



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