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Original Article

A Study on AI-based News-Anchoring on Electronic Media

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Abstract: *It is too early to declare 'Artificial Intelligence is a boon'. It may prove to be a bane even in the near future because the development of Artificial Intelligence is still in its nascent stage, and the future of it is unknown. Any new technique and technology has its 'disruptive' impact on the ecosystem of socio-economic texture; however, as the propositions of Economics say 'there is no exact alternative to anything'; it applies in the context of Artificial Intelligence also. Our present concern in this paper is to gauge the disruptive/constructive impact on the news-anchoring of television production in India. The 'machine learning' technology and self-communicating system have brought a paradigm shift in almost all aspects of life in in recent years. Augmented Reality, Virtual reality, IoT and ML have revolutionized the entire programming abilities for creating totally new environments. Certainly, it is the human being who has preferred to inverse the man-machine relationship in quest of mitigating the drudgery of working and living. Indeed, the miraculous development in the field of machine-based information and communication systems have reduced the use of time, money and energy to a great extent, but at the same time, it has augmented the dangers of elimination of 'human beings' from the entire working world. The first condition of human development is the 'inquisitiveness' and 'constructivism' through which it does not only establishes new horizons for further development but also augments the social dignity, thereby opening up new vistas for the next generations. Pheidippides (530 BC) had to run for more than 40 kilometers just to deliver news of triumph, and now a days, such information can be delivered through a click of a mouse or more securely through the satellite-based communication system. However, had Pheidippides not run for such a great distance, the grace of running Marathon in the Olympics would not have tested the limits of human physical strength! Human being is conditioned to be in touch with other humans for eons and depriving them from this natural preference by replacing the human element by machine will definitely prove to be disastrous because the biggest ever pandemic in the modern age is 'loneliness' and not the physical ailments. A senior executive and AI scientist had recently uttered ""forget Artificial Intelligence – in the brave New world of big data, it's 'Artificial Idiocy' we should be looking out for."At present, the world is impacted and ruled by digitalization technology that includes multiple mass media platforms, including TV and newspapers. Bestowing an entirely different structure and personality through Artificial Intelligence and other innovations by impersonating human insight for programming them to think like human beings and to copy their activities should be well-neigh unacceptable. AI may elevate the status of the mass media and focusing business activities from content creation to the purchaser experience altogether, but one thing should be kept in mind that 'human beings' is the ultimate truth for which anything and everything should work. The constant and progressive use of AI in Social media, Automated Journalism and many more is desirable till it does not surpass the human ability to think, act and digest as per its natural inclinations and preferences.. The objective of this research piece is to offer an overview of the application of AI and to gauge the impact of news-anchoring on television broadcasting. The study will rely entirely on secondary sources of data and attributes and the major finding will be brought forth from the perspective of robotic journalism.*

Keywords: *Artificial Intelligence, Machine Learning, Robotic Journalism, Augmented Reality, IoT* **.**

I. INTRODUCTION

It appears that everyone is talking about Artificial Intelligence (AI) these days for valid reasons. As to the Future of Workforce Development Report, 62% of recruiting managers anticipate significant changes in the nature of work due to artificial intelligence. However, this fluctuates with the person you are speaking to, evoking mixed feelings like exhilaration and nervousness. "It will help human innovativeness and human interest by taking a ton of the leg work out of discovering significant substance, exploring enormous measure of substance, and re-designing and re-purposing content". Artificial Intelligence (AI) is expected to have a significant impact on every aspect of the media value chain. It will enable content creators and editors to be more creative and productive while also facilitating content consumers in finding relevant content. This phenomenon has led to a revolution in communication within the media.

II. AIM OF THE STUDY

The objective of this manuscript is to offer a brief overview of the application of AI-based news-anchoring on television broadcasting as well as to assess the impact, prospects and future problems of AI in the field of media. This study is entirely

based on secondary data sources, and the major finding of this work is to project the impact of the use of 'humanoid' in television broadcasting. Descriptive and, to some extent, interview based analysis has been adopted for easy understanding and further deliberations.

III. LITERATURE REVIEW

The literature review is the foundation of all scientific research studies. It provides a wide overview of the current knowledge and indicates future trends in a specific research area/s. To identify the research gaps, a scientific literature review also becomes essential in establishing the credibility to the research works.

In the present context, the author has consulted the following literatures on the impact of AI on various aspects of life, especially on TV news anchoring activities and broadcasting:

1. Sommer Andres. Industrial robots for patient support. *Ion Beam Therapy* describes the essentiality of robotic apparatus in critical medical cases and how efficiently they support the treating physicians and nurses to the extent.
2. Saadatian Elham, Iyer SP, Lihui Chen, Fernando ONN, Hideaki N, Cheok AD, Madurapperuma AP, Ponnampalam G, Amin Z. Low cost infant monitoring and communication system. In *Humanities, Science and Engineering.'* The paper gives a fine analysis of "a low-cost, mobile-based monitoring and advisory system that continuously monitors … and remotely updates". The data and analysis send the processed information and generate advisory information for taking immediate action.
3. 3.Mann Steve, Niedzviecki Hal. Cyborg: digital destiny and human possibility in the age of the wearable computer. The study is an experimental one and presents a novel physiological model of interrupt ability for outside communications, based on the models of attention, which is the basis of PAUIs (Physiologically Attentive User Interfaces) and his state of mind.
4. 4.Turkle Sherry. A nascent robotics culture: New complicities for companionship. The study *depicts that though the man's e*ncounters with humanoid robots are relatively new, it is increasingly occupying their place. The scholar has Christened it as 'relational artifacts.' The report is based on a long-term fieldwork that concludes that even though it is relatively primitive robots, people are becoming progressively judgmental about the "appropriateness" of such machines.
5. 5.Samani Hooman Aghaebrahimi, Parsani Rahul, Rodriguez Lenis Tejada, Saadatian Elham, Dissanayake Kumudu Harshadeva, Cheok Adrian David. 'Kissenger: design of a kiss transmission device.' The authors of the paper have developed a model named ' Kissenger' or kiss messenger -- a peculiar interactive device which presents a "physical interface for transmitting a kiss between two remotely connected people." The augmented reality based device promotes closeness in long-distance partnerships between people. The study randomly selected seven couples to check the efficiency of 'Kissenger' based on the current 'video chat' technology.
6. 6. Taras Vas, Rowney Julie, Steel Piers. 'Half a century of measuring culture: Review of approaches, challenges, and limitations based on the analysis of 121 instruments for quantifying culture.' This study was conducted in 2009 i.e. around 13 years back. The authors examined 121 parameters for measuring culture and provided a historical overview analyzing how the culture was 'operationalized' over half a century. The study focuses on the various dimensions of culture models and 'issues of cross-cultural survey'. They had identified the research gaps and offered valuable directions for future research.
7. 7. Egon L, van den Broek. 'Robot nannies: Future or fiction?'
8. Although the study was presented more than a decade's ago, it specifically points out some of the severe challenges that 'robot nannies' face. Providing senses and artificial intelligence to the 'robot nannies' may wonder human being, but it may endanger the psycho-physical development and safety of the children simultaneously.
9. Jeffrey M, Bradshaw, Dignum Virginia, Jonker Catholijn, Sierhuis Maarten. 'Human-agent-robot teamwork'. The scholars emphasized that 'Teamwork' became a widely accepted way of describing the nature of 'multi-robot and multi-agent cooperation'. A lot of important works and applications require people and robots to work together. Such important applications needed tools and techniques for ensure team's reliability and safety, even though they were designed independently.
10. Zhang Zhengtao, Xu De, Yu Junzhi. 'Research and latest development of ping-pong robot player'. In an effort to address several persistent problems throughout the creation of the Ping-Pong robot player, the study examines the "vision system," "control system," and "executive mechanisms" of the Ping-Pong robot players created by various nations. On the other hand, the article, which offers only a few answers, presents a possible future developmental path for the Ping-Pong Robot.
11. Samani Hooman, Koh Jeffrey, Saadatian Elham, Polydorou Doros. 'Towards robotics leadership: An analysis of leadership characteristics and the roles robots will inherit in future human society.' By examining leadership definitions and sorting out the areas where people have not been able to lead, the paper presented the idea of robotics leadership. Exemplifying by referring to stock brokering and transportation, the authors explained 'how robots could be used

instead'. Still, the paper provoked critical deliberations by identifying the potential weaknesses of robots in leadership positions and to assume that such leadership positions were progressing rapidly.

12. Acerbi Alberto, Nolfi Stefano. 'Social learning and cultural revolution in embodied and situated agents.' The paper investigates whether artificial intelligence may benefit adaptively from the integration of social and private learning in the development of behavioral skills. Furthermore, the inferences indicated towards 'iteration of social and individual learning throughout the generations and the developed skills transmitted through generations successfully.

IV. DISCUSSION & CONCLUSION:

A) Understanding the Rise of AI-Based News Anchors on Television:

In the age of cut-throat competition and gaining highest TRP; the news industry is also undergoing a paradigm shift powered by Artificial Intelligence (AI) techniques. The AI news anchors or the virtual characters fuelled by sophisticated ML algorithms are bringing a revolutionary change in the TV news world in which it is presented and consumed. These virtual presenters can mimic human-like speech patterns and can analyze unlimited data while delivering news updates around the clock. The AI news anchors are restructuring the media landscape with much higher efficiency; reducing costs, and biases.

AI news anchors are virtual characters created using sophisticated algorithms for machine learning. Large volumes of data are analyzed by these algorithms, namely news articles, videos, and audio recordings, to generate lifelike representations of news presenters. It is the *Karishma* of deep learning techniques by which AI news-anchors can simulate human-like speech patterns and expressions thereby leveraging natural language processing. The biggest advantage of AI news anchors is that they can work tirelessly without any breaks or mood swings like human presenters. They are enabled to collect, assemble and provide real-time information to the audiences round the clock. Further, the AI news anchors mitigate the essential and expensive studio setups and eliminate the needs of make-up artists, wardrobe management departments etc. which leads to higher profits and making news production far more economical. In fact, the prime motivation behind the use of AI news anchors is to drastically reduce the news production system and to stay free from human-generated controversies that a group of news anchors are regularly suffering from abusive comments through trolling.

The AI news anchors are customized to adopt various news genres while catering to versatile target audiences. The viewers may stay informed about the latest developments and analysis of complex situations quickly across various fields, including politics, finance and entertainment. Obviously, they are programmed to deliver news instantly in other Indian languages, enabling news corporations to expand their reach nationwide, sitting from a 10x10 cozy room. Then, the viewers select their preferred and sometimes infatuated with the AI news presenters based on their accent, tone and appearance.

It is interesting to note the rapid progress in the field of AI news-anchoring on Television in India this year. The following references are the glimpses of the development. A noted journalist, Mr. Anand Parthasarathy, in his article titled 'Indian Television Sees Spurt of AI-Driven Robotic News Anchors In Multiple Language Channels', presents remarkable photographs of AI news anchors and elaborated on their specificities.

Lisa is India's newest AI news anchor, who debuted on Odisha TV last week

1. Since March of this year, a number of regional language TV channels in India have debuted AI-driven news anchors.
2. Since no country has introduced intelligent news reading bots on this scale, the experiment is attracting attention from the media globally.
3. AI is being utilized as a novelty or a tool to help bridge the gap among broadcast TV and digital web channels; it does not appear to have found its way into news selection as of yet.

He writes, ‘India has become a hub for robotic news presenters powered by artificial intelligence (AI) for regional Indian television networks, thanks to a rush of debuts during the past four months.’

Lisa, an AI news anchor who made her debut on Odisha TV, an Odia-language TV channel, is the newest member. She speaks both English and Odia, making her versatile.

"International media and reportage have taken notice of the development over the past few days. This includes numerous web-based technology-related news sites as well as news outlets ranging from Hong Kong's South China Morning Post to CNN, a US-based satellite broadcaster."The experiment began in March of this year when the organization unveiled Sana, the Aaj Tak channel's first Artificial Intelligence (AI) news anchor, at the yearly India Today Conclave in Delhi.

Sana of the Aaj Tak channel made her debut at the India Today Conclave in March 2023.

During a news broadcast, she reads the headlines before passing the reins to a human presenter or even engaging with them. During the conference, she made her renowned debut by speaking with Prime Minister Narendra Modi.

This is a YouTube video that shows a normal Sana newscast. She is fluent in Hindi, English, Bangla, and French, which she used to speak when the prime minister was in France lately.

One of the few males in the lineup of AI-driven speaking humanoid robots in India, Ivan, was introduced as MediaOne's own TV news anchor in April on the Malayalam TV station.

He frequently assumes responsibility for delivering the daily "Sharp Ten" headlines at 10 p.m. Here, Ivan greets the audience and introduces his service while introducing a little part.

Ivan, on the Malayalam TV channel MediaOne, is the rare male AI anchor.

Mr. Parthsarathy provides many examples of this type of behavior in his writing, saying that the South has embraced new television technology far more quickly than other regions.

Maya on Big TV is the first AI anchor in Telugu.

Maya, the first AI anchor in Telugu, has been brought in by Big TV. Maya was launched with the assistance of a team of fifteen AI specialists, according to Big TV CEO Ajay Reddy.

Lisa of Power TV (left) and Maya of News 1st Kannada were launched almost simultaneously for Kannada-speaking audiences.

Similarly, the 'Viewers in Kannada have a choice of two AI news anchors: Within days of each other, earlier this month, *Power TV* launched Soundarya while *News First Kannada* debuted Maya. They appear both on live television and digital channels.'

The 'News First Kannada CEO S Ravikumar is quoted at BestMediaInfo.com this week clarifying that Maya is not just a mouth and lip synching anchor… AI anchors are 'reading' the news, but AI Maya is "talking to her viewers."

'She is getting over 2,000 questions a day via WhatsApp, he added. Maya will also deliver news in English. Here is a clip of Maya delivering news in Kannada.'

AI Kaur on New 18, Punjab-Haryana.

AI News anchor greets the viewers with the typical Punjabi gesture of "Sat Sri Akaal" regularly.

Elaborating on the 'Global Interest' regarding AI news anchor usage in India, Mr. Parthasarathy writes-

'There is global interest in how the Indian language experiments in AI-based robot news readers pan out — and some discussion on the extent to which AI may influence news selection and bias or even propagate fake news when tools like ChatGPT are available.

But from what these *desi* AI anchors have been doing in recent weeks, these fears may be unfounded because Indian channels have been largely using these speaking bots sensibly as ways to deliver news that has been created and fed by human editors.'

'There is no indication that AI is being used for news selection — since on a particular day, the news read by the AI anchors and human anchors hardly varies.'

'Ever since the Chinese news agency *Xinhua* launched the world's first newscast by an AI newsreader in February 2018, there has been much discussion on where this will lead.'

'Media watchers agree that mundane news desk tasks like compiling and delivering weather bulletins, financial market statistics or sports results can be usefully entrusted to bots since no editorial judgment is involved, and this will relieve human reporters of mundane tasks.

An AI-bot cannot cover a live news event or provide analysis or a critique of news. Such things will remain human tasks.

Before India, nations like Indonesia, Kuwait, Malaysia and Taiwan are known to have tried AI TV anchors after China launched it.

But the multiple Indian language efforts in deploying intelligent news reading bots is the most wide ranging effort by any country so far.

The ability of AI to translate the same matter and create credible speaking voices in multiple languages on the fly is obviously a consideration in a country where TV already broadcasts in a dozen or more languages.'

'So far, AI-fuelled news presentation is being used in this country, either as a novelty or as an aid to bridge the gap between broadcast TV and digital online channels from the same group.

The Indian experience may be a pointer to what can and cannot be done, what should and shouldn't be done when introducing AI into the news studio.'*1]

So far as addressing the issues of biases and misinformation is concerned, Mr. S Akash, in his article titled 'Understanding the Rise of AI News Anchors' in the analytics insight.net*2 writes:

"One notable advantage of AI news anchors is their potential to minimize biases and misinformation. Personal biases or mistakes may be unintentionally introduced by human anchors into their coverage, which can damage the news' credibility.

Conversely, AI news presenters don't rely on human deductive reasoning or purposeful distortions because they only use data and algorithms. This fosters a more objective and reliable news environment."

Talking about the challenges and limitations of the issue, Mr. Akash writes ***"While AI news anchors offer numerous benefits, there are challenges and limitations that need to be addressed. First and foremost, AI-generated news presenters lack the human touch and emotional connection that traditional anchors provide. Viewers may find establishing a personal relationship with virtual characters challenging, leading to potential disengagement. Privacy and data security concerns arise as AI algorithms require access to extensive private and public data to operate effectively."***

Visualizing the future of news anchoring Mr. Akash writes: **"**However, it is crucial to note that AI news anchors will only replace human journalists partially. Human reporters bring unique perspectives, investigative skills, and critical thinking capabilities to journalism. AI news anchors serve as valuable complements, augmenting news production processes and offering efficiencies that human reporters cannot match."

Digging into the mankind's prehistory, it can be inferred that human society first organized to develop culture while ceasing to a nomadic lifestyle in order to settle on agrarian land. The products from these new regions, fish from water bodies, etc., all these seemingly basic things remained the roots of all culture. In the long journey of mankind, the simple perception of culture became complex. The 21st century has seen robotics rise to the pinnacle of civilization. "The endeavor to produce embodied artifacts in the development of biomechanical imitation, but inevitably in artificial intelligence and emotion, with the advent of affective computing, ushering in a new era in which robots assume ever-more-complex roles in our society. Robots are now social beings that play roles in therapy, medicine, and even companionship. They are no longer just tools to help with some of the more menial jobs needed to run our civilization."*3

At present Robots are defined in three categories: industrial, service and social. However, very soon, the definition will comprise of robots into the roles of generators, consumers and collaborators of everything.

From this perspective, the "Robot Culture" may relate to the special kind of construct that would emerge through robotic influence. AI based or, for that matter, 'Robot culture' would refer to a different set of values that the robots themselves may learn and practice and eventually become antagonistic to the human values and culture. Such a trend may create robotic food, robotic dance performances, a robot created artifacts because it "would be grounded in a distinctively "robotic" condition" and, as such ", would be beyond the bounds of present human cognition."

To illustrate the evolution of artificial culture in cooperative robot systems, e-puck robots were utilized as an example. Yet, noise, robot incongruity, and sensor precision pose challenges to the cultural inheritance via the imitating process. [4]

The capacity for robots to replicate themselves may also be a sign that artificial culture will eventually arise within a robot society. Evolutionary robotics approaches, which suggest the automatic production of autonomous robots, may be able to do this. Robots are thought of as autonomous artificial beings that develop their own skills in close interaction with the environment and without human intervention. This idea is inspired by the Darwinian notion of selective reproduction of the fittest.*5 [In addition, the capacity for self-replication and the manner in which genetically encoded features influence self-replication facilitate the development of individuals molded by a number of interconnected basic units capable of cooperating and coordinating to exhibit coherent behavior.] *6

The formation of artificial culture might be aided by this coherence and coordination.

We have tried to characterize "robot community culture" in this description as the artificial culture that is human-like, human-programmed, and understandable. But robot-robot civilization may likewise be foreign to humans and entirely unfathomable.*7 The social and cultural environments of the civilizations for which robots are being built and implemented must be carefully considered when analyzing the general acceptance of robots within particular societies. Another issue to be examined is the effect of robotics on people, every day practices and its positive and negative societal transformations.

When someone feels as though they are truly present in a faraway setting, they experience the multifaceted and subjective idea of feeling presence*8. It is greatly impacted by media content. This state is produced in part by Gibson-state perceptual characteristics. Input from some or all sensory channels is included in this, along with more deliberate, perceptual, and other mental processes that integrate newly received sensory data with ongoing issues and previous experiences.*9

Steuer identifies the factors that determine tele-presence as interaction and vividness. According to media artist Michael Nainiark,*10, the first vividness relates to a technology's capacity to create a sensory-rich, mediated environment that possesses the same qualities as realness. The second is called interactivity, and it describes how much a medium's users may shape the structure or content of the transmitted environment.*11

In order to get around technological or individual constraints, sensory replacement, enhancing the experience, defining the nature of presence and interaction, real-timeness, tactile stimulation and tangibleness, taste and smell transition, visual signals and augmented surroundings, real-timeness, spatial audio, and real-timeness are some of the kinds of mediation that have been the focus of the majority of studies to date on leading to the sense of presence. Each of the aforementioned factors somewhat triggers the feeling of presence.

The feeling of presence is not solely a cerebral concept, even though it needs a body. Many virtual surroundings (such as those generated with HMDs) are obviously lacking a body, which will diminish the knowledge of presence.*19.

More embodied, happy, holistic, mediated stimulations lead to a greater illusion of genuine presence. We can list the following behaviors as evidence of how physical objects are important in the perception of presence: making sculptures, visiting temples, children's innate desire to have fun with dolls and games, and the simplicity of classical physics compared to the complexity of quantum mechanics.*20 etc.

When two people are physically close to each other, they also experience many of the co-presence aspects. Because social entities frequently rely on non-verbal cues as well as verbal ones, such as body language, posture, facial expressions, eye contact, as well as additional inputs embedded in the spatial context, proximity is crucial for high-fidelity communications.*21.

The impact of integrated telepresence on communication is evident. However, the human aspects of happiness and fun (affective dimension) and human physiological aspects, such as the body's involvement in encouraging co-presence, have received comparatively less attention.

Limitation of Artificial Intelligence:

Hubert Dreyfus, an American philosopher and professor of philosophy at the University of Berkeley, has written a criticism of artificial intelligence, stating that computers would never be ready to replace humans or live as equals*22. According to Dreyfus, robots can never comprehend the universe because it is "organized by embodied creatures like us as well, to be dealt with by beings like us". Dreyfus goes on to add that in order for a robot not to become utterly lost in space, it must be able to gain experiences from each movement it takes, just like a human body. A solution is for AI researchers to reproduce and implant a world and body model within the robot in order for connections to be formed, which is currently proving unfeasible. Without this requirement, computers cannot grasp the world in the same way that humans do.

However, robots have already demonstrated a number of benefits over humans*23, which renders them perfect for adopting various roles in the natural environment. Still, imagining the prospect of substituting our present cultural leaders with robots may seem absurd, given the way technological advances continues to interfere in our daily lives and our accessible acceptance of the change it brings, one might contend that giving robots positions responsible for has not only unavoidable, but also desirable and something we are attempting to accomplish.

B) Conclusion:

Indian television news-anchoring and broadcasting system is rapidly passing through a transitory phase between ‘human culture’ and ‘robotic culture’. Of course, the emergence of AI news anchors signifies a ‘big leap’ in the news industry. Through customized AI video generation, news networks are swiftly delivering the breaking news, drastically reducing production costs, and HR issues as well as ensuring higher message accuracy. Thus, AI news anchors are complementing human reporters, exponentially increasing the efficiency and effectiveness of news broadcasts. Obviously, as far as such technologies continue to advance, AI Studios will plays a vital role in reshaping and transforming the news production and consumption system in the digital age, thereby offering a tremendous push to innovative ideas in the news industry.

C) Key Learning:

The study finds that, for now, three major subfields are rapidly developing in the field of news media: computer vision, machine learning, and optimization. Most AI news projects heavily rely on the considerable amount of funds from the tech giants. Consequently, it limits AI’s potential, and a small number of players can penetrate the news industry. Therefore, it can be conclusively said that TV journalists and news presenters are required to master in AI technologies so that they might protect their livelihood as well as develop more subfields in TV journalism and present newer ideas for future research.

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