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TRANSFORMATIVE IMPACT: THE EVOLUTION OF RADIO PROFESSIONAL PROFILES IN THE ERA OF ARTIFICIAL INTELLIGENCE

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Abstract

The use of artificial intelligence (AI) in the realm of radio has experienced significant growth, transforming the way radio content is produced, distributed, and consumed. This shift presents challenges and opportunities for professionals in the field, who must adapt to the convergence of human creativity and the innovative capabilities of AI.

The main objective of this research is to comprehensively analyze existing literature on artificial intelligence and professional profiles in radio. The aim is to identify emerging patterns, trends, and perspectives that shed light on how AI has influenced the definition of competencies and roles in this specific sector. The ultimate goal is to provide a deep understanding of the changes that AI has introduced to the radio workforce.

The methodology employed in this study is based on a content analysis of specialized literature in artificial intelligence and radio. A thorough review of research, academic articles, and relevant publications in specialized journals was conducted. Selection criteria were applied to ensure the inclusion of relevant and recent studies specifically addressing the interaction between AI and professional profiles in radio.

The results revealed substantial changes in radio professional profiles with the incorporation of AI. Technological skills were highlighted as fundamental, with a growing demand for knowledge in algorithms, data analysis, and the management of AI tools. Additionally, a trend towards the redefinition of roles was observed, freeing professionals from routine tasks to focus on creativity and innovation in radio production.

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While the results indicated clear benefits, they also pointed out challenges, such as the need to address ethical issues and ensure a smooth transition for workers into an increasingly digitized environment.

This study concludes with the recognition of the need for ongoing adaptation in radio professional profiles in response to the influence of artificial intelligence.

Keywords: AI Integration, artificial intelligence, professional profiles, radio, role

Introduction

The convergence between artificial intelligence (AI) and radio is leading to a revolution in how radio content is produced, distributed, and consumed. Thus, the symbiosis between technology and communication has generated a series of innovative applications that are transforming the landscape of the radio industry at a time that demands a clear decision between "adapt or perish," as pointed out by Galindo (2019).

One of the most prominent aspects of AI application, also in radio, is the automation of tasks such as search, classification, and information processing (Lemelshtrich, 2018). In this regard, algorithms and computer systems are playing an increasingly important role in the automated generation of content. From scriptwriting to music selection and real-time program production, AI is enabling greater efficiency and personalization in radio programming. Furthermore, AI is enhancing the user experience on radio through personalization. Recommendation algorithms help listeners discover new programs or content tailored to their interests, thereby increasing audience loyalty and engagement. Radio could become an even more interactive and participatory medium thanks to AI tools facilitating real-time feedback and audience involvement in content creation (Reuters Oxford Institute, 2022).

As a result, a series of challenges and opportunities arise for industry professionals. These professionals must find ways to effectively integrate AI into their creative process, leveraging these innovations to enrich content and improve their relationship with the audience. This requires the acquisition of new skills and technological resources, as AI is significantly transforming professional practices and writing processes (Crusafon, 2022).

However, these advancements are not without obstacles, as they raise concerns about the information conveyed (Fieiras-Ceide *et. al.*, 2023).

Additionally, it is vital for radio professionals to be aware of these risks and work to ensure the objectivity and diversity of radio programming.

Research Objectives

The main objective of this research is to comprehensively analyze the existing literature on artificial intelligence and professional profiles in radio. The ultimate goal is to provide a deep understanding of the changes that AI has introduced into the radio workforce. In addition to this objective, this research has the following specific aims:

- Explore the various applications of AI in the radio industry.
- Analyze the impact of AI on the radio production process and its influence on professional roles.
- Examine the ethical challenges associated with the use of AI in radio.

Methodology

The methodology employed in this study is based on a content analysis of specialized literature on artificial intelligence and radio. A systematic literature review (SLR) of academic articles and relevant publications in specialized journals was conducted. Systematic literature review is a type of secondary research that follows a structured methodology to identify, analyze, and interpr*et. al*l relevant information (Zhang and Alibabar, 2011). This method has been used in various fields, such as sociology (Kitchenham and Charters, 2007).

To conduct the systematic literature review, selection criteria were applied to ensure the inclusion of relevant and recent studies specifically addressing the interaction between AI, radio broadcasting, and professional profiles in radio. First, a search and collection of studies, articles, books, and other relevant resources on artificial intelligence and radio were carried out. Google Scholar, Scopus, and Web of Science databases were used. In this way, the most important documents related to the topic were identified. Once collected, the most relevant and updated documents for the research were selected. Thus, a review of abstracts, keywords, and

content was conducted to determine the suitability of each document. Subsequently, content analysis of the documents was carried out through detailed and systematic reading, identifying themes, trends, methodological approaches, key findings, and relevant information related to the study object. After completing the readings of the selected documents, the findings were interpreted, and the information was synthesized to draw significant conclusions.

Results

The Radio Industry Revolution: Automation, Production, and Personalization in the Digital Era

The technological revolution in the journalism industry has led to the implementation of artificial intelligence (AI) in various aspects of the communicative and informational process.

AI is transforming how news and content are produced, distributed, and consumed. This revolution is not confined solely to the realm of written or televised journalism but is also profoundly impacting the radio industry.

Efficiency in content production has been one of the primaries focuses of AI. The automation of information in radio has ushered in a new era in journalistic coverage, where algorithms and robots play an increasingly important role in news generation and distribution (Ufarte-Ruiz *et. al*., 2023; De Lara *et. al*., 2022). AI has become widespread in areas such as sports results, stock quotes, news bulletins (Crusafon, 2022), or international event coverage (Rojas, 2019).

However, it is not only used in newsrooms to automate and expedite processes or in natural language processing to generate stories but also in content labeling, subtitle creation, subscription assistance, or interview transcription (Crusafon, 2022; Newman, 2022). This automation offers significant improvements in efficiency and productivity, especially in content generation. AP and Reuters agencies were pioneers in applying AI for automatic news writing (Rojas, 2019); and the BBC and The Guardian have utilized similar techniques to semi- automatically generate stories, enabling them to increase the speed and scope of their production (Bronwyn and Rhianne, 2019). The Washington Post began using Heliograf

to write around 300 short reports and alerts during the Rio Olympics in 2016 (Galindo, 2020). Other radio media are beginning to experiment with electronic editing assistants like Tansa and Grammarly to automate editing tasks, streamline editing processes, and improve consistency in labeling.

Another notable aspect of AI application in the radio industry is the creation of synthetic media, an innovative way to create digital content. These media, such as voice clones and voice skins, can generate audio, video, characters, and virtual environments through algorithms. Although still in an early stage of development, they are expected to play a fundamental role in future extended reality (XR) experiences, such as the Metaverse (Crusafon, 2022).

Furthermore, artificial intelligence technologies such as Machine Learning (ML), Deep Learning (DL), Natural Language Processing (NLP), and Natural Language Generation (NLG) have been integrated into all aspects of the radio industry in recent years. These tools are used to make production processes more efficient, such as automated summaries, voice text, and automated subtitles (Newman 2024). Another interesting utility employed in the radio medium is automatic transcriptions, which have become routine in newsrooms. Thus, Zetland, a Danish media outlet, has created a speech-to-text transcription tool focused on journalists, aimed at facilitating the transcription process for minority languages. The Finnish broadcaster Yle provides a service tailored to Ukrainian refugees, offering information that is automatically translated by artificial intelligence and then supervised by an expert in Ukrainian. But it's not the only translation into other languages that this media offers, as during the COVID-19 pandemic, it provided news in languages spoken in the Middle East and North Africa such as Arabic or Persian (Reuters Institute, 2023). The BBC has also delved into automatic language translation and improving voice synthesis technology to advance its Japanese video service, although currently live broadcasting is done manually.

Another artificial intelligence tool being applied in the radio field, anticipating significant changes in how news is produced and consumed, is ChatGPT (Reuters Institute, 2022).

ChatGPT belongs to 'generative AI', which allows the creation of all kinds of content (text, images, audio, videos, data, code, designs, simulations, etc.) with just a few brief instructions.

Interaction and Personalization in Radio: Innovative Strategies to Satisfy the Audience

Furthermore, AI is being employed to enhance audience interaction through chatbots, personalize or verify content, and automatically generate content from organized data (De Lara *et. al*., 2022; Fieiras Ceide *et. al*. 2022a). To improve listener satisfaction and maintain constant engagement with their audience, radio stations have begun to adopt strategies based on analyzing their listeners' behavior. This approach allows production teams and hosts to identify the topics that most interest their audience, thus adjusting their programming to meet those demands. Like other media, radio is harnessing the power of technology to better understand its audience. For example, some programs have implemented unsupervised machine learning algorithms to anticipate topics that will resonate most with listeners in the future. These tools help producers make informed decisions about the content they offer, thereby maximizing the impact of their broadcasts (Reuters Institute, 2023; Newman, 2023).

Additionally, new ways of interacting with the audience are being explored through the use of artificial intelligence. For example, Yle was one of the pioneers in experimenting with personalization through its news app (Fieiras-Ceide *et. al*. 2022b). Additionally, some stations are considering the implementation of personalized subscription systems offering extra content (Newman, 2020). This not only gives listeners the opportunity to directly support their favorite programs but can also help top programs increase their revenues.

On the other hand, AI is helping to personalize and deliver more effective content to increase audience engagement. One of these tools used by the media is Sophi, and along with others, they are successfully employed to automate the vast majority of web pages, resulting in a 17% increase in click-through rates (Reuters Institute, 2023). Additionally, these tools are also employed to manage social media posting and dissemination, determining the best time to post or crafting the most suitable headline (Fieiras-Ceide *et. al*., 2023; Newman, 2024).

Impact of AI on Professional Roles in Radio

Artificial intelligence (AI) is breaking new ground by evolving the roles of professionals in radio, expanding beyond the written format to on-demand audio and video. This advancement is transforming how the audience consumes information, offering flexibility and nonlinear access. Furthermore, this impacts the communication model by introducing new ways to interact with the audience and distribute content.

Thus, the role of different professions is affected by AI, and radio is no exception to this trend. While initially it may seem that AI could be used to drive further job cuts due to the automation of certain tasks, media executives are optimistic and believe it will benefit the profession (Newman, 2020). Thanks to automation, in the medium term, the creation of audio and video from a volume of data will be possible (De Lara *et. al*., 2022; Carvajal *et. al*., 2022; Fieiras Ceide *et. al*., 2022a). Indeed, roles in newsrooms are changing through the augmentation of current functions. In the same vein, Túñez-López *et. al*. (2021) note a shift in the journalist's role, with less emphasis on routine tasks replicable by machines and a greater focus on generating unique cognitive value for news production, moving away from routines or styles easily imitated by artificial intelligence. Despite concerns raised by automation in newsrooms, media outlets employ it due to its profitability and its ability to free up time for journalists (Rojas Torrijos, 2019; De Lara *et. al*., 2022). Likewise, AI has proven useful in tasks such as transcription and translation, but it is still unsatisfactory in story writing (Newman, 2020; Canavilhas, 2022). Therefore, it seems that AI does not imply the elimination of journalistic jobs but rather allows journalists to dedicate their time to researching and finding relevant stories for the audience, i.e., to be more efficient (De Lara *et. al*., 2022), while more routine tasks can be performed by algorithms and robots.

Similarly, there will be new tasks for professionals in existing roles and new workflows (Beckett, 2019). For this, professionals need to acquire technological skills, as well as an increasing demand for knowledge in algorithms, data analysis, and AI tool management. This implies a transformation in journalism's professional roles, demanding profiles such as impact editors, platform editors, competition analysts, or specialists in subscriber content, gender, or diversity (Crusafon, 2022).

Faced with such rapid transformations, we encounter an increase in uncertainty and concern in the ethical sphere of radio. There is concern among professionals that AI will lead to a significant increase in automated or semi-automated media in the coming years. Internationally, media outlets clearly differentiate between information crafted by artificial intelligence and that which is not. Thus, the English media The Times indicates whether its content is created, supervised, and distributed by humans or by robots. However, in Spain, media outlets produce automated news generation, but there is no evident differentiation when a news item has been created by machines (Túñez-López *et. al*., 2021). Therefore, it would be essential for Spanish media to ensure differentiation between content generated by AI and content generated by media professionals, especially in radio.

Although AI facilitates the creation of multimedia content, it is important that its implementation is carried out ethically and responsibly, ensuring that public trust in the medium is not compromised. That is, there should be no difficulty in distinguishing between the real and the fake, the truthful and the deceptive, or the manipulated. However, the growth of fake news driven by artificial intelligence is a matter of significant concern due to its significant impact, as occurred in the 2020 US elections. Therefore, it is evident that artificial intelligence entails a series of consequences that directly affect data protection, security, and democracy, and thus, it will be a matter of great relevance in the next decade (Newman, 2020).

AI could facilitate the creation of irrelevant and false content in the form of text, audio, and video, which could undermine professionals' trust by presenting misleading information under the guise of news. Therefore, it is necessary to address ethical issues and ensure a quality transition for media professionals towards an increasingly digitized environment.

Conclusions

The introduction of AI is radically transforming how content is produced, distributed, and consumed in radio. From task automation to semi-automated content generation, AI is enhancing efficiency and productivity at

all stages of the process. A wide range of applications are being employed to implement AI in radio, including automatic news generation, speech transcription, language translation, multimedia content creation, content personalization, and audience interaction management. This demonstrates the scope and versatility of AI in this field. These tools are already successfully used in various radio stations and media outlets for automatic news writing, speech transcription, language translation, and improving audience interaction through chatbots or personalized subscription systems.

All of this has transformed and is transforming the role of radio professionals, extending functions beyond traditionally assigned ones. This suggests that radio professionals must adapt to these new forms of content production and distribution. Among them, the way AI is changing how audiences consume content stands out, offering flexibility and nonlinear access to it. This indicates that radio professionals must consider how to adapt their production and distribution strategies to meet the new demands of the audience.

While AI can automate certain routine tasks in newsrooms and be useful in tasks such as transcription and translation, the role of the journalist is evolving towards generating unique cognitive value for news production. Therefore, radio professionals should focus on creative and analytical skills that cannot be easily replicated by AI.

Although it might initially seem that AI could lead to job cuts due to the automation of certain tasks, it seems more likely that AI is causing a shift in roles that can create new opportunities and ways of working. This suggests that radio professionals can coexist with AI, using its capabilities to complement and enhance their work rather than replacing it entirely.

Additionally, AI is generating a growing demand for new professional profiles linked to technological skills in radio professional roles, such as knowledge of algorithms, data analysis, and AI tool management. In this regard, media professionals must acquire technological skills to adapt to the changing demands of the job market.

In conclusion, the impact of AI on professional roles in radio is significant and is transforming how news is produced and distributed. However, it also presents new opportunities for radio professionals, if they are willing to adapt to the changing demands of the job market and acquire the necessary skills to work alongside AI.

Nevertheless, despite the numerous benefits that AI offers, it also poses challenges and ethical considerations, such as the need to ensure transparency in content generation, combat misinformation, and protect the privacy and security of audience data. Thus, ethics in radio media in the AI era is a crucial issue that requires careful attention and concrete actions from media outlets and professionals, as it is necessary to ensure transparency, integrity, and accountability in content production and distribution to preserve fundamental values.

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TRANSFORMATIVNI UTJECAJ: EVOLUCIJA PROFILA RADIJSKIH PROFESIONALACA U DOBU UMJETNE INTELIGENCIJE

Sažetak

Upotreba umjetne inteligencije (AI) u području radija doživjela je značajan rast, transformirajući način na koji se radijski sadržaj proizvodi, distribuira i konzumira. Ova promjena donosi izazove i prilike za profesionalce u tom području, koji se moraju prilagoditi konvergenciji ljudske kreativnosti i inovativnih sposobnosti umjetne inteligencije.

Glavni cilj ovog istraživanja je sveobuhvatno analizirati postojeću literaturu o umjetnoj inteligenciji i profesionalnim profilima u radiju. Cilj je identificirati nove obrasce, trendove i perspektive koji osvjetljavaju način na koji je AI utjecala na definiranje kompetencija i uloga u ovom specifičnom sektoru. Konačni cilj je pružiti duboko razumijevanje promjena koje je AI uvela u radnu snagu radija.

Metodologija korištena u ovom istraživanju temelji se na analizi sadržaja specijalizirane literature o umjetnoj inteligenciji i radiju. Proveden je temeljit pregled istraživanja, akademskih članaka i relevantnih publikacija u specijaliziranim časopisima. Primijenjeni su kriteriji odabira kako bi se osiguralo uključivanje relevantnih i novijih studija koje se posebno bave interakcijom između umjetne inteligencije i profesionalnih profila u radiju.

Rezultati su otkrili značajne promjene u profesionalnim profilima u radiju s uvođenjem AI-a. Tehnološke vještine istaknute su kao temeljne, uz sve veću potražnju za znanjem o algoritmima, analizi podataka i upravljanju AI alatima. Također, uočena je tendencija redefiniranja uloga, omogućujući profesionalcima oslobađanje od rutinskih zadataka kako bi se usredotočili na kreativnost i inovacije u radijskoj produkciji. Iako su rezultati ukazali na jasne prednosti, istaknuti su i izazovi, poput potrebe za rješavanjem etičkih pitanja i osiguravanja glatkog prijelaza radnika u sve digitaliziranije okruženje.

Studija zaključuje prepoznavanjem potrebe za kontinuiranom prilagodbom profesionalnih profila u radiju kao odgovor na utjecaj umjetne inteligencije.

Ključne riječi: integracija AI, umjetna inteligencija; profesionalni profili, radio, uloga