

Journalism and Artificial Intelligence in Latin America

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An Invitation to Debate

More than three centuries ago, British thinker, poet and politician John Milton published one of the most important and well-known texts against censorship: *Areopagitica*. It was one of the catalysts for an important debate on the protection of freedom of expression and freedom of the press.

Many centuries before him, the Greeks had strong arguments about the importance of the *doxa* (opinion) for democracy.

The debates on the vital importance of freedom of expression and access to information for democracies and for the development, protection and promotion of other human rights are by no means new.

However, there is no doubt that the advent of new information and communication technologies (ICTs), particularly the expansion of the Internet, offers a unique and unprecedented dimension to these discussions.

The impact on the system for the protection and promotion of human rights, on the consolidation of democracies, on development, decision-making, public policies, and, at the end of the day, on the everyday life of every citizen, is unprecedented.

The progress of knowledge societies is intimately related to the deepening of the discussions on the right to freedom of expression and universal access to information in an increasingly connected world. Press freedom, media development, privacy, the role of technology in public policy, open governments, documents' protection, and media and information literacy, are some of the many issues on the agenda.

In an attempt to intensify the role of the Organization as a laboratory of ideas, UNESCO Office in Montevideo offers these Communication and Information Discussion Papers.

Produced by leading experts on each subject, their main objective is to provide inputs so that decision-makers and public policymakers can take into account different angles regarding the issues on the international agenda, always with the existing international standards as a driving axis.

This publication does not intend to have the last word. On the contrary, the purpose is to contribute to an increasingly informed and pluralistic debate on the core issues of yesterday, today and tomorrow.

Enjoy your reading!

Executive Summary

In a context of exponential growth of artificial intelligence (AI) and technological dominance in all spheres of life – economic, social, cultural, environmental, and political –, this Paper explores the impact of AI on journalism from a critical and ethical perspective, with special attention to Latin America. It addresses inequalities and challenges inherent in the implementation of AI in the region. The aim is to offer a useful tool in the continuous training of students and media professionals.

Part 1, “Carrying out Quality Coverage in AI News,” explores how journalists can maintain quality standards in the face of fast-paced AI development, addressing competition between journalism and marketing, the influence of science fiction narrative, and the application of AI ethical principles to journalistic coverage. This part offers critical tools and strategies to analyse AI systems and assess their political, social and cultural impact.

Part 2, “Using AI in Latin American Newsrooms,” examines the growth and uses of AI in newsrooms, focusing on its role in content distribution and metrics analysis. There is a special focus on innovation in AI in the media within the region.

Part 3, “Mapping of AI Tools Developed by Newsrooms in Latin America,” presents a detailed mapping of AI tools developed by newsrooms in Argentina, Colombia, Mexico, Paraguay, and Peru. It includes cases and solutions for checking (dis)information, hate speech detectors, search engine positioning tools, generative artificial intelligence, and techniques to differentiate deepfakes.

Finally, Part 4, “Toolbox for Journalism in the AI Age,” offers a range of resources available in AI and automation for a variety of journalistic functions, from transcripts and video editing to content creation and image and audio evaluation.

Introduction: Journalism in Times of Fast-Paced AI Development and Concentration of Technology

Transformations in automation have been happening for decades: they are reflected in the tasks that require less time, in industrial processes, in the resolution capacity of chatbots and virtual assistants, in the recommendations of e-commerce, social media and streaming. However, in recent decades, data accumulation, an increasing infrastructure processing capacity and advances in computer modelling have accelerated transformation.

The term “artificial intelligence” (AI) has been around for nearly seven decades¹ and automation processes are common in our daily lives. But, for non-specialists and the media, the year 2023 will be remembered as the one in which AI became a massively used word.

As the industry moves forward, the press often reflects the speed of a growth that seems imminent. Every day we find stories and front pages that tell us, for example, how generative AI will help us perform cognitive tasks in our work. They also tell us about the advantages of facial recognition technologies for public safety or companies that are already selecting their staff based on algorithms. However, there are fewer cases of journalistic stories narrating the dilemmas of workers in times of AI or the adaptation of different industries (art, teaching, commerce, security, etc.) to the new era. It is also not common to see stories on the biases and maturity issues that cause that some technologies using AI (for example, facial recognition) cannot be accepted without restricting people’s fundamental rights, or the risks of discrimination associated with automated systems used by companies to decide between potential candidates for a job.

These questions and answers should be a fundamental part of journalism as a profession and newsrooms as a space for critical thinking. Wondering about the people behind the creation of algorithms, the data used to train automated models, and the ultimate purposes for which people decide to automate a process should be a vital part of today’s reporting profession. Is this system designed to achieve greater equality between people or, on the contrary, is it deepening an existing (social, economic, cultural, racial) inequality?

Stories on artificial intelligence are no longer the prerogative of journalists working in the technology section. Today, with automation being part of almost every process of economy, politics and life, there are AI systems operating in the healthcare system, education, public safety and prisons, factories, art, cultural consumption (how content is classified in social media) and other sectors. Hence the importance of knowing how these systems work to then inform the public about their stories and their impacts and opportunities.

An everyday case of the massive impact of intelligence on our lives is the AI systems used by social media platforms to prioritize, moderate, filter and even censor content. Social media are not only spaces for cultural consumption, but also for communication and freedom of expression. However, through algorithmic mechanisms of hierarchy, recommendation, reduction of scope,

1 The term was coined in 1956 during the Dartmouth Conference (Hanover, New Hampshire, USA) by computer scientist John McCarthy, one of the first theoreticians of artificial intelligence, along with one of the fathers of computer science, Alan Turing.

invisibility, labelling, removal of content or suspension of accounts, people and automated systems designated by these companies make daily decisions about the content of third parties published on the platforms, thus affecting people's right to information and communication. In some cases, these decisions are certainly made to prevent crimes, but in others the limits and scope of this private moderation of content are not clearly established².

AI in Latin America and the World: Inequalities and Challenges

Currently, very few technology companies can create large-scale AI systems. Besides Google, Apple, Meta (formerly Facebook), Amazon and Microsoft, companies which are already installed and are known as GAFAM, there are actors such as Open IA (United States) and the Chinese company ByteDance, owner of TikTok. Global dominance of these technologies lies in the hands of the United States and China. Geopolitical factors, which encourage competition, coupled with a growing flow of capital for the development of these applied sciences, contribute to an acceleration in the presentation of AI-based resources and tools at an almost daily rate.

"Tech firms are wielding unprecedented amounts of capital to expand their base of power in creative ways. Civil society should explore structural points for intervention," states IA Now Institute³. According to this organization, running ChatGPT costs \$3 million a month and Google invests another \$10 to \$20 million to train its Pathways Language Model (PALM)⁴.

The concentration of power around large technology companies and the exponential progress of these AI systems, which promote their cross-cutting application in different fields and industries, is a wake-up call for States that should pursue the common good and protect the human rights of individuals. In this regard, UNESCO argues that, without human oversight and multi-sectoral agreements, these changes can widen existing economic, social, and cultural inequalities.

Recognizing the profound and dynamic positive and negative impacts of AI on societies, ecosystems and human lives, Member States of UNESCO adopted in November 2021 the Recommendation on the Ethics of Artificial Intelligence⁵. With a consensus of 193 states, it is a call to the public and private sectors to "enact rules and regulations that ensure the beneficial development of these technologies." It aims to promote a multidisciplinary dialogue to ensure respect for human rights and cultural diversity, as well as equitable access to advances and knowledge, and sets out specific principles and frameworks for action.

In March 2023, during the Latin American Meeting in Artificial Intelligence Khipu, more than 30 researchers and specialists from the region disseminated the Montevideo Declaration on Artificial Intelligence and its Impact on Latin America⁶. They warned that "there is no social value in technologies that simplify tasks for a few people, generating a high risk for many others, limiting their opportunities for development, their access to resources and their rights." They noted: "We

2 Martínez Elebi, Carolina and Pérez, Ana Laura: "Moderación privada de contenidos en internet y su impacto en el periodismo". Observacom and Friedrich Ebert Foundation, 2022. <https://www.observacom.org/wp-content/uploads/2022/10/Moderacion-y-Periodismo.pdf>

3 <https://ainowinstitute.org/>

4 <https://ai.googleblog.com/2022/04/pathways-language-model-palm-scaling-to.html>

5 <https://www.unescor.org/es/legal-affairs/recommendation-ethics-artificial-intelligence>

6 <https://www.fundacionsadoskand.org.ar/declaration-de-montevideo-on-artificial-intelligence-and-its-impact-in-latin-america/>

agree that there is something undemocratic if such momentous decisions are not taken by the bodies elected by the people, and also on the need to establish regulatory mechanisms (both nationally and internationally) to ensure that AI technologies have an understandable and manageable level of risk, and mainly to ensure that they bring social value, and are not solutions that benefit a few to the detriment of the majority.”

Differences in resources and power between regions are also a challenge to consider as AI technologies develop. The specialists agreed that “risk and impact assessment and mitigation should be part of the design process. Instruments must be implemented to prevent, detect early and even suspend the implementation of technologies whose risks are unacceptable.”

To reduce the gaps, UNESCO has been working on the development of common criteria and standards among countries to address a reality that requires attention and speed in management capacity. Recognizing that countries are at different stages of AI development, there are resources such as the Readiness Assessment Methodology⁷, which covers five dimensions: Legal and Regulatory, Social and Cultural, Economic, Scientific and Educational, and Technological and Infrastructural, each with qualitative and quantitative indicators for each State and its different structures to implement advances in AI issues.

In this situation, one of UNESCO’s actions in the region is to help empower journalists and communication professionals on the development of technologies and their current context, in order to communicate their implications to citizens.

Just as the concept of technology is so broad that it becomes unspecific, we can think of artificial intelligence as a centre that branches into various disciplines, with new terms and implications of a technical and ethical, moral, and political character. Every aspect of this so-called “fourth industrial revolution” brings along global debates about its operation and application in a struggle between companies and States.

In 2019, the UNESCO Regional Office for Latin America and the Caribbean published a handbook titled “*Manual de periodismo de tecnología. Investigación, escritura, temas, seguridad*”⁸. This text sought to be a contribution to make a qualitative leap to the coverage that is offered today, on average, on the Internet, social media, algorithms, and new technologies. Since then, the Office, with the support of the UNESCO Multi-Donor Programme and in conjunction with different strategic partners, has trained more than 10,000 professionals in technology and AI⁹.

7 Readiness assessment methodology: A tool of the Recommendation on the Ethics of Artificial Intelligence, UNESCO, 2023: <https://unesdoc.unesco.org/ark:/48223/pf0000385198>

8 <https://unesdoc.unesco.org/ark:/48223/pf0000371880>

9 [https://nataliazuazo.com/2022/10/17/artificial-intelligence-technology-and-journalism-in-latin-america/#:~:text=More%20than%204%2C000%20media%20professionals,using%20artificial%20intelligence%20\(AI\)](https://nataliazuazo.com/2022/10/17/artificial-intelligence-technology-and-journalism-in-latin-america/#:~:text=More%20than%204%2C000%20media%20professionals,using%20artificial%20intelligence%20(AI))

Part 1: Carrying out Quality Coverage in AI News

The term “artificial intelligence” is neither unambiguous nor free from debate. In her *Atlas of AI*¹⁰, American researcher Kate Crawford says that – although the term became popular in the 60s – it was not until the new millennium, with the increase of computing capacity and the development of new processing techniques, that it has rapidly expanded into the academic and industrial fields, reaching our daily lives through computers, Internet, smartphones, and social media.

Artificial intelligence “is neither artificial nor intelligent,” Crawford says. With the first part of this statement, the author explains that the word “artificial” tends to hide the infrastructure with which these large-scale systems operate. Its main resource, the hardware of the servers, requires the use of specific minerals which are scarce on Earth, the increase in the demand of which results in the problematic mining exploitation and utilization of finite resources. At the same time, to keep them up and running, servers, which are generally installed in low temperature locations, require a cooling level that results in a high consumption of water and energy, generating a considerable environmental impact around them.

On the other hand, Crawford questions the use of the word “intelligent” for two reasons. One is because it offers a biased view of the concept of human intelligence along with the tendency to anthropomorphize these technological systems. The other reason is the invisibility of the raw material with which these AI models are trained: Data, programmed by people, which naturally contain their own ideological and cultural biases. With this last operation, what is hidden is the deeply political character of AI, since according to the training data, rules, and rewards previously defined, we can be faced with a “certificate of power” (that is, a technology that presents itself to us as transformative, but just maintains the current state of affairs). In short, if we do not question how AI systems are shaped to “serve existing dominant interests,” we will be reproducing the previous inequalities of society.

Both in the material sphere (materials, energy) and the cognitive sphere (data, ideas, and previous human work from which it nourishes), AI is based on a strong extractivism. While primitive AI systems were based on programmes and rules, current ones work with large companies that use resources already existing in society, including those of artists, copywriters, musicians, and writers, as well as citizen information and user data with which these machine learning systems are fed back.

While primitive AI systems were based on programmes and rules, the current systems of so-called strong artificial intelligence work from training with large databases. For this, companies compile and use resources already existing in society, including those of artists, copywriters, musicians, and writers, as well as citizen information and user data with which machine learning systems are fed back.

10 Crawford, Kate. *Atlas of AI. Power, Politics, and the Planetary Costs of Artificial Intelligence*. Fondo de Cultura Económica, 2022.

Journalism in Times of Fast-Paced AI Development

Marketing versus Journalism

Within the abundance of information about AI, we mainly find two types of stories. On the one hand, those that refer to or list novel AI products and tools. On the other hand, those that inform on or explain the current or future scope of these services in our daily lives.

As it happens with all other technology news, most of these stories arise from marketing strategies of companies that promote their products, and therefore refer to their systems with excessive pretentiousness, many times as being similar or superior to human intelligence, or with exaggerated promises. In times of initial “fast-paced development” of technologies, there is also the so-called hype, i.e., an exaggerated excitement for something, which causes a mass production of news on a certain topic.

As science journalist Federico Kukso points out, times of exaggeration in the face of different transformations are not new: “Hype has been a constant in the coverage of the Human Genome Project since the early 1990s and persists today with the CRISPR gene editing technique that has awakened old and new dreams.” And he warns that, even when headlines make promises with terms such as “progress,” “game change,” “paradigm shift,” “a before and an after,” or “revolution around the corner,” the promised transformations are rarely achieved. However, in these times it is necessary to produce and consume news full of clickbait, i.e., deceptive titles intended to attract the attention of readers or decision makers in a news cycle that is 24 hours on the lookout for news¹¹.

Hype naturally captures attention and takes part in the creation of eye-catching headlines. This means that when we want to get information about AI, we may find a lack of rigour or sensationalism in its approach. We can assume that the current digital news consumption methodology, based on search engine optimization (SEO) and custom algorithms, feeds the inclusion of keywords (in this case, “artificial intelligence”), leaving aside specific terminologies necessary to understand and differentiate the great variety of systems and models that make up this technological universe. It also avoids going deeper into issues related to people’s rights when living with these systems.

When dealing with technology issues, it is important to include the voices not only of technology providers, but also of other specialists: Developers, independent academics in the field, sociologists, philosophers, and others who are going to be impacted by those systems. For example, if we tell a story about how an AI can help in the cure or treatment of a disease, we should not only resort to the word of the person selling the new product, but also to the medical community, bioethics specialists, patient communities, etc.

11 Kukso, Federico: “Cómo los periodistas pueden evitar ‘el hype’ al cubrir los desarrollos de COVID-19 en América Latina”, Knight Center, December 22, 2021: <https://journalismcourses.org/es/news/como-los-periodistas-may-avoid-hype-to-cover-covid-19-developments-in-latin-america/>

The Science Fiction Narrative in Technologies

Another element that undermines the objective of finding or producing contents which are rich in quality information is the science fiction narrative surrounding this type of technological advances. Headlines like “AI could cause the extinction of humanity” or “Will AI leave us unemployed?”, focus on technology as an autonomous entity and forget about the relationships and responsibilities of human societies: Regarding their creation, application, and benefit. At the same time, the reproduction of these messages encourages dystopian effects¹², which prevent audiences from getting closer to understanding and acting in a scenario where there is already a technological gap, especially in Latin America.

“Arguably, the most interesting thing about AI is often not the technicalities around the software, nor the hardware side. It is the inter-linked human dimension – including the vested interests that are always involved in defining and promoting AI, in software development and in hardware control and access. And of course, the availability, ownership and conditionalities around data,” says Guy Berger, former secretary of UNESCO’s International Programme for the Development of Communication¹³.

The Fundamental Principles of Journalism Applied to AI

In this context, the first step is not to lose sight of the fact that AI stories need to be approached rigorously, with the same fundamental questions of every journalistic story.

The handbook on technology journalism titled *Manual de periodismo de tecnología* (2019)¹⁴ provides a comprehensive guide and an applicable method to keep an eye on every aspect. There, you can delve into two pillars that will allow you to build solid stories:

- 1) How to write a story on technology:
 - What questions to ask.
 - How to include data, images, and metaphors.
 - How to incorporate chronicle elements into technology stories.
- 2) The four dimensions of technology stories:
 - The big picture: The context of the story.
 - The explanation: Understanding technology.
 - Legislation: Universal, regional, national.
 - The impacts: Social, political, economic.

The Manual also offers practical exercises to deepen your knowledge and various tools and resources useful for professional practice.

12 Zuazo, Natalia. Guerras de internet. Prefacio. Internet en el pedestal. Debate, 2015, Buenos Aires.

13 A Handbook for Journalism Educators Reporting on Artificial Intelligence <https://unesdoc.unesco.org/ark:/48223/pf0000384551/PDF/384551eng.pdf.multi>

14 <https://unesdoc.unesco.org/ark:/48223/pf0000371880>

Tools for an AI Journalism with a Critical Look

With AI systems open to the public (such as ChatGPT or Bard) that process enormous amounts of information and can provide answers to any question (although these may be inaccurate or result from a false premise), the debate about “the truth” is especially topical. Those who practice journalism can make a difference, build sense with a critical look, differentiate sources of information, contextualize and point out social impacts of technology, to become a reliable source of information for people.

Distinguishing the Type of Artificial Intelligence

One way to make a difference is to contextualize and define the different AI technologies, which are constantly evolving. Even the very definition of the characteristics and purpose of these technologies change as their capacity and uses expand.

AI involves teaching and training machines to perform tasks which can be more or less complex and were previously performed by humans. That can mean detecting trends from data or images, recognizing patterns, connecting elements, creating texts or images from other existing data, etc.

The algorithms¹⁵ that process large amounts of data and predefined models to perform specific tasks have been in our everyday life for years. In simple terms, it is a set of rules or instructions that receives the data, processes it, and provides a response. This is what today is commonly known as “traditional or weak AI.” A practical example is the technology applied by search engines and social media to offer us content based on our interests, or those technologies that can recognize and catalogue elements in images. Or virtual assistants like Google Assistant or Amazon Alexa.

The paradigm shift we are witnessing is given by the so-called “general or strong AI.” It includes the use of neural network models¹⁶, machine learning¹⁷ and deep learning¹⁸. They are systems capable of performing a variety of tasks based on and according to the data with which they were trained (data sets). In these cases, many of these current systems are generative and use natural language models (NLP). For example, from a text with our request (prompt), they can create texts, images and/or videos, and even perform cognitive and decision-making tasks more sophisticatedly than before.

15 An ordered set of instructions, steps or processes that allow you to perform a certain task. They are the basis of AI systems.

16 A neural network is a method of artificial intelligence that teaches computers to process data in a way that is inspired by the way the human brain does it.

17 It is a part of AI where machines create their rules or algorithms and assumptions based on data previously supplied to them. Two common examples are the translation tools and the responses our email service offers us based on our previous conversations.

18 It is a subcategory of machine learning that deals with the use of neural networks to improve things such as speech recognition, computer vision and natural language processing. In recent years, deep learning has helped to make advances in areas as diverse as object perception, machine translation and voice recognition. Unlike machine learning, deep learning is less monitored. It involves, for example, the creation of large-scale neural networks that allow the computer to learn and “think” for itself without the need for direct human intervention.

The Role of Open Source

In software development, the practice of making the source code of a programme or application publicly available is called Open Source or Free Source. This approach, which promotes collaboration and transparency, plays a crucial role in the artificial intelligence (AI) industry. Unlike closed code or proprietary code, the possibility to access the source allows a deep understanding of the technology's operation and allows it to be modified to adapt to other environments or distributed by anyone.

The free software community promotes the democratization of knowledge by facilitating the use of technology to a wider audience. This ensures the development of new solutions, optimizing resources in a transparent and collaborative way. Knowing the nature of the source code of any system is valuable information both when we communicate the scope of an AI tool and when we decide to use it.

The Problem of “Hallucinations” in Generative AI

Something fundamental to keep in mind regarding the use of these tools is that they produce text from pre-existing data; they produce a new text through prediction, based on linguistic patterns and rules. In this process, they often generate what is commonly known as “hallucinations”, i.e., information that seems consistent but is false or imprecise. That is why it is important to discourage the use of these tools in tasks that require precision and avoid using them as a single source of query. During the webinar organized by The International Journalists' Network¹⁹, Álvaro Soto, director of the National Center for Artificial Intelligence (CENIA)²⁰ in Chile stated that one of the major challenges is to understand “emerging behaviour”: “It is not yet understood why when we feed these techniques with more data (a trillion, in the case of Chat GPT) they begin to show these advanced cognitive abilities” and for this reason he argues that discretion must be exercised when using these technologies. “These machines are very powerful tools that are available to people in different fields, and we need to find a way for them to serve people and allow us to generate more equal societies and not the opposite,” he said.

Generative Artificial Intelligence and Disinformation

With the proliferation of generative AI, both text and audiovisual, the challenge will henceforth be to filter, edit, contextualize, and implement new methods to differentiate what is false from what is real.

Generative AI generates a dual impact on disinformation. On the one hand, it allows the production and distribution of disinformation on an unprecedented scale, with the ability to create more sophisticated manipulated content. At the same time, we are witnessing the emergence of more and more AI applications, such as data verification chatbots, and fake content detection tools, such as reverse image search and algorithms that identify whether an image or video has been manipulated.

19 Seminario web 87: Desafíos y oportunidades de la inteligencia artificial en la labor periodística <https://www.youtube.com/watch?v=QFAFkCqPuO8&t=68s>

20 <https://cenia.cl/>

In a fake news scenario, generative AI will impact both news production and dissemination. In particular, the biggest challenge will be the handling of increasingly sophisticated tools to detect:

- The origin of a text or an image.
- The manipulation of a text or an image.
- The composition of a text, image, or video (how many sources or parts it is made up of).

In this sense, journalists must commit to continuous learning in their work. Information checking will continue to have a fundamental value. It will have to be complemented with different tools and resources (see Toolbox at the end of this publication), in order to provide credibility and achieve the key goal of shedding light to society.

Getting involved in the development of these tools will also be critical and is already critical in different parts of the world. Journalists, with their knowledge of sources survey, resources, and editing, must be protagonists regarding the technologies that help combat disinformation in the AI era.

The Newsroom, the Portuguese startup founded by Pedro Henriques and Jenny Romano in 2021, embarked on a project that puts the knowledge of journalism at the service of peoples' information, using artificial intelligence technologies. Through an app, The Newsroom offers daily news summaries generated by AI with the purpose of providing a complete picture of the facts. These summaries are based on widely reported news. "We identified the elements of consensus around what is reported. What are the main things that all newspapers agree on? What are the basic facts that everyone is reporting on? And on the other hand, what are the elements of divergence? Based on that, we write a new story that essentially includes all that. It starts with the elements of consensus, the basic facts of what is happening, and then it can explore what we call multiple perspectives," explains Henriquez. Currently, they produce a minimum viable product in English, but are looking to expand and work in other languages²¹.

Questioning Data Used for Training AI Systems

AI is usually presented through its results. "This artificial intelligence tool predicts medical results better than most doctors," says a headline in a digital media. However, little is said about the data with which the models are trained, or about the invisible data set (called test or validation set) used to achieve the results. Also, in general, the development of algorithms, that is, the instructions for making decisions, is usually invisible.

When we refer to data, we are not just talking about letters or numbers: We are also talking about images, human faces, individuals' biometric data, sounds, fingerprints, medical tests, that is, a large amount of information available in public and private databases. To consider this is relevant since, as Kate Crawford points out, "machine learning systems are trained on images like these every day – images that were taken from the Internet or from state institutions without context and without consent." She adds: "They are anything but neutral. They represent personal stories, structural inequities (...) but the presumption that somehow these images can serve as apolitical, inert material influences how and what a machine learning tool "sees".²²" The context of

21 <https://thenewsroom.ai/>

22 Atlas of AI, op. cit.

the data, the development of the diversity of the training base and their representation capacity, is extremely relevant to obtain reliable results in AI systems.

“In 2017, Amazon researchers scrapped a machine learning model used to filter through résumés, after they discovered it discriminated against women. The culprit? Their training data, which consisted of the résumés of the company’s past hires, who were predominantly men,” exemplifies the Columbia Journalism Review²³. Another case that made headlines in a lot of media was the “AI system” that the government of Salta, a province of Argentina, announced that could predict teenage pregnancy, based on a Microsoft model. Different journalistic^{24 25} and academic researches, after investigating the construction of the data and the algorithms used, found that the model yielded the same result (possibility of pregnancy) virtually regardless of the data used for training. However, when applied in communities with high poverty rates, low educational levels, and lack of resources, and located in places where indigenous peoples lived, it concluded that these places had a greater chance of young pregnancy, thus stigmatizing women and girls living in those places. When the programme appeared in the media, its effectiveness was critically questioned, and its use had to be reviewed.

In relation to this, privacy and handling of personal data is another concern. Training AI models based on information and personal data collected without people’s consent is another frequent challenge, which must be addressed by journalists. Such is the case of IBM that, in 2019, launched a data set with the faces of a million people. The following year, a group of plaintiffs sued the company for including their photographs without their consent.

As in all other technology issues, knowing local, regional, and international data protection laws is essential for journalism to address AI issues²⁶. Journalists should ask AI developers about their data collection practices and whether people have given their consent. To do that, they must first know the legislation in force.

It is also relevant to investigate how work is carried out with the data and about the labour practices of those responsible for processing and classifying the enormous volume of existing information. According to Time magazine, OpenAI subcontracts Kenyan workers for \$2 an hour to tag offensive content that is then used to train ChatGPT²⁷.

Questioning AI Models

“This AI model guarantees 90 percent accuracy.” Companies use phrases like this around the narrative of artificial intelligence. Part of the journalistic work is to question these statements, going deeper through questions about the data of the model, verifying these data in the real world or requesting concrete examples of their implementation.

The following are examples of questions that will help improve accuracy:

23 “How to report better on artificial intelligence,” Columbia Journalism Review, July 6, 2023.

24 <https://nataliazuazo.com/2018/04/21/inteligencia-artificial-prejuicios-salta-y-conin/>

25 <https://www.wired.com/story/argentina-algoritmo-embarazada-prediccion/>

26 Manual de Periodismo de tecnología, op. cit.

27 “Exclusive: OpenAI Used Kenyan Workers on Less Than \$2 Per Hour to Make ChatGPT Less Toxic”, Billy Perrigo, January 18, 2023: <https://time.com/6247678/openai-chatgpt-kenya-workers/>

- What types of data and from what sources were used for training?
- Based on this test, can we extend the conclusion to other fields, or would we have to carry out different tests with other data sets?
- Was the model tested in theory or in its specific domain?
- What margin of error, false positives or false negatives does this model have?
- Where or in what biases are these errors detected?
- How will we work to solve them?

Perhaps, after this series of questions, the company points out that the model has a different type of effectiveness or can provide a better explanation about the improvements it is implementing in it. Many times, in addition to contributing to public understanding, these consultations are useful for companies' managers, who can thus not only deepen the work carried out so far, but explain back how the results were achieved, and forward for their improvement.

In terms of people's rights, it is vital that AI models ensure equitable outcomes. In this sense, the question of how a model works in different groups of people is the most important to avoid discrimination or biases (gender, racial, socio-economic, cultural, etc.). For example, in the case of imaging disease detection tools, it is extremely important to consider false positives or the training of systems in people of different age groups or geographical locations, because the use of these technologies without human oversight can lead to treatments which could be from ineffective to harmful to health.

Facial recognition systems are particularly likely to provide false positives. The journalistic research organization ProPublica, published in 2016 an investigation on the COMPAS algorithm, used to predict future crimes in the United States, with a margin of two years. A team of journalists, composed of Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, found that, despite having a similar level of accuracy in black and white defendants, the algorithm had twice as many false positives for black defendants as for whites²⁸.

In 2022, the facial recognition system of fugitives (SRFP) of the City of Buenos Aires was declared unconstitutional, as a result of a collective legal action led by the Argentine organization Observatorio de Derecho Informático. Among the grounds validated in the judgement, it was pointed out that the SRFP "resulted in a number of shortcomings and irregularities" within which it stressed the creation of false positives and the need for the government of that city to carry out an impact assessment on the protection of personal data, in accordance with the legal regulations in force²⁹.

28 "Machine Bias. There's software used across the country to predict future criminals. And it's biased against blacks," ProPublica, May 23, 2016: <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>

29 "The facial recognition system of fugitives of the City of Buenos Aires is declared unconstitutional", November 2, 2022, <https://iapp.org/news/a/se-declara-inconstitucional-el-sistema-de-reconocimiento-facial-de-city-ofBuenosairesprofugitives/>

Narrating the Political, Social and Cultural Impacts

As it is noted in the handbook *Manual de Periodismo de tecnología*³⁰, once we have narrated a news story about technology, we have provided context, a technical – and, if necessary, legal – explanation, it is necessary to analyse the impacts of that story beyond novelty. The most relevant mechanism for conducting an impact analysis is to challenge yourself to look beyond the apparent: Take the machines and the processes around them and make questions about them and their link to reality.

The best analysis are those that start from the intersection of emerging technologies and people's daily lives. In the case of algorithms, it could be:

- How are they being used for surveillance – with what technologies, effectiveness tests or false positives –, in my city or where I live?
- How is AI being used for the management, control or monitoring of workers in a particular industry?
- How are new automation tools affecting a particular sector, for example, art or industry in particular?
- In the areas of health, education, communications, and culture: what tools are offered, what impacts do they have?
- What biases do these systems have? Do they generate greater well-being and equality or, on the contrary, amplify pre-existing problems?

It is important to note that AI models can work as expected (deliver results) and still have problems. For that reason, we recommend using certain ethical principles and human rights notions, mentioned below, that can help us evaluate automation technologies.

Ethical Principles and Impact Assessment

The UNESCO Recommendation on the Ethics of Artificial Intelligence³¹ is a comprehensive tool that proposes principles and recommendations aimed at protecting, promoting, and respecting human rights and fundamental freedoms, as well as considering cultural diversity at all stages of the life cycle of AI systems. With its principles as our north, we can ask a few of questions to assess impacts in different aspects:

30 Manual de Periodismo de tecnología, op. cit.

31 Recommendation on the Ethics of Artificial Intelligence https://unesdoc.unesco.org/ark:/48223/pf0000380455_spa

Table 1. Ethical Principles for AI and Guiding Questions for Their Application

Principles	Guiding Questions
Proportionality and Do No Harm	Does this tool have proportion for the purpose it was devised? Does its effect on the problem cause any harm?
Safety and security	Using this system entails any security risk or potential vulnerability? Have they been properly evaluated and corrected before they were put into practice? Does the use of this tool provide sufficient protection to people?
Fairness and non-discrimination	Were discriminatory or biased outcomes throughout the life cycle of this AI system minimized or avoided? Were effective remedies against discrimination and biased algorithmic determination considered?
Right to privacy and data protection	Are data for these AI systems legally collected, used, and shared, according to my country's rules?
Human oversight and determination	Is it possible to attribute ethical and legal liability (at any stage of the life cycle of AI systems) to existing natural persons or legal entities, or to public bodies entrusted with such a mission?
Transparency and explainability	Are users fully informed when a decision is based on AI algorithms, particularly when it affects their safety or human rights? Can users request explanations and information from the AI actor or the relevant public sector institutions? Are users aware of the reasons why a decision has been taken that affects their rights and freedoms? Can they submit claims to a staff member of the private sector company or the public sector institution empowered to review and amend the decision? Did AI actors inform users when a product or service was provided directly or with the help of AI systems, in an appropriate and timely manner?
Responsibility and accountability	Are the actors responsible for this AI system (public/private) accountable for actions taken based on it? Are there adequate monitoring, impact assessment, audit and due diligence mechanisms in place, including in relation to whistle-blowers protection, to ensure accountability for AI systems and their impact throughout their life cycle?
Awareness and literacy	Are there adequate levels of awareness and literacy regarding the functioning of this AI system, through open, accessible education, with the full participation of different actors in society, including a human rights approach?

AI Ethical Principles: Their Application in Journalism

The future impact of AI on journalism is still uncertain and under construction. However, its potential to exert a broad and profound influence on society reignites the debate on editorial ethics and responsibility in journalism. Style manuals set the standard of journalistic production of each media, but the growing adoption of emerging technologies raises new questions about good and bad practices in the field.

As it was noted in “[Narrating the Political, Social and Cultural Impacts](#)”, in addition to being able to address the impact of AI on journalistic stories, the use of new automated tools in newsrooms also requires an assessment that conforms to ethical and human rights principles.

In 2021, the BBC created a section of “Guidelines for Computer Journalism”³², which are inspired on the editorial values of the BBC and deepen the search for a “framework of equity, accountability, confidentiality, transparency and security in information retrieval”. That same year, Corporación de Radio y Televisión Española (RTVE) referred in a statement³³ to the ethical and moral challenges the company faces when implementing AI. Some of the challenges it mentions: Responsibility in systems that make some kind of decision, principles of intellectual property, use of the Spanish language, technological sovereignty and coherence regarding environmental impact.

The need for human oversight of tools, data and models is one of the principles repeated in media recommendations and is also present in the UNESCO Recommendation on the Ethics of Artificial Intelligence. In the different phases of production of a journalistic story or content, the oversight by people, who have more or less experience, will be fundamental in the different instances of review prior to publication.

Transparency is a second principle to consider. If a journalistic content was created with the help of AI tools, said information is as relevant to the audience as the mention of the sources of information or the signature of the author. This also applies to image management tools, sample data used to generate an info graphic, and even the team of individuals in charge of working on a new algorithm to provide a solution to a newsroom.

“Many times, there is no critical look at technologies beyond their problem-solving ability. I believe we need to think about what tools and how they are built,” says Gia Castello, hacktivist and manager of projects to strengthen independent journalism. For example, data mining carried out by some systems is relevant to investigative journalism, especially in sensitive issues and regions. Consequently, it is necessary to carry out an impact assessment when choosing the tools and to know how to protect yourself before taking risks. “If we are doing research and using a proprietary tool, we can, for example, use an alternative email and a VPN referring to a different geolocation, to obfuscate³⁴ the data that we leave behind when using these tools,” Castello recommends.

32 “Responsible AI at the BBC: Our Machine Learning Engine Principles”, Myrna MacGregor, May 2021: <https://www.bbc.co.uk/rd/publications/responsible-ai-at-the-bbc-our-machine-learning-engine-principles>

33 <https://www.rtve.es/rtve/20210128/2020-ano-ia-innovacion-rtve/2070942.shtml>

34 Obfuscation refers to covering up the meaning of a communication making it more confusing and complicated to interpret for third parties.

In this sense, the commitment to the **creation and use of local products and technologies becomes particularly relevant**. If we think that AI can impact on a large scale and take on important tasks in building the news industry, then it is important to have as much control and autonomy as possible over those tools.

Copyright issues also emerge with the rise in the use of generative artificial intelligence systems for the journalistic work. From the materials with which a model was trained to the originality and authorship of the pieces created (whether text, image or video), the debate is between ethics, good practices and legal aspects. At a webinar organized by the International Center for Journalists (ICFJ)³⁵, Data & Society research director Jenna Burrell said that this problem also directly affects the recognition of journalistic work. “The work you have published as a journalist is protected by copyright and is the basis for that model, but you don’t receive any compensation. I don’t think copyright law is really up to par right now,” she said.

Journalists’ safety also becomes relevant in AI tool management environments. The nature of the tools that are used must also be considered in journalistic processes. As it happens with services such as Google or social media platforms, private companies offer free access tools, and, before deciding to use them, it is necessary to analyse the impact of the way in which these tools have been trained and how they work. To protect the integrity of the information entered and generated with these tools, but also to keep data and sources protected, journalists and editorial teams need to become familiar with the terms of service regarding usage, data, and storage policies.

35 <https://ijnet.org/es/story/chatgpt-y-periodismo-ventajas-desventajas-y-temores>.

Part 2: Using AI in Latin American Newsrooms

Growth and Uses

In recent decades, digital transformation has accelerated processes in news production. Analogue tools were turned into digital tools in all production processes, **new digital native media flourished**³⁶, new journalism formats emerged, and more task automation tools have been implemented. This even happened with applications that were not intended to be part of the daily work of media professionals.

“There are AI applications for all phases of the journalistic process – reporting, production and distribution –, as well as commercial and interaction uses,” says Mattia Peretti, JournalismAI Project Manager³⁷. Tools that incorporate automation can be used individually by media workers to optimize processes or may be applied as a global strategy of the media to improve or increase the level of production.

The incorporation of AI in the newsrooms goes from automated grammar checkers that facilitate (and in some cases even replace) the editor’s job in the newsrooms to the use of big data to analyse the impact of content on audiences or generate new opportunities in investigative journalism. Among other tools, we find:

- **Automatic translators or audio transcribers:** These are good examples of how you can speed up the process of transcribing an interview and the possibility of easily incorporating content sources from other latitudes.
- There is an increasing number of programmes, web applications and smart phone apps to **produce or distribute audiovisual content**, which are designed for users with a low level of technical knowledge to edit, subtitle and format content (texts, images, audio) for different platforms.
- For **data journalism**, the use of machine learning in the identification of patterns and trends from large databases has meant a reduction in the time that journalistic teams spend analysing mass information, thus contributing to the task of making connections, contextualization, and long-range reports.
- In commercial uses, **statistics** have become key to demonstrating the impact of a certain media outlet. The application of technologies that use user data, such as **programmatic advertising**³⁸, has generated new opportunities for personalized ads.

36 “La Fundación Gabo publica ‘El hormiguero’: la investigación más completa sobre medios nativos digitales latinoamericanos”, Gabo Foundation, August 22, 2022: <https://fundaciongabo.org/es/recursos/publicaciones/ la-fundacion-gabo-publica-el-hormiguero-la-investigacion-mas-completa-sobre>

37 <https://journalismai.com/>

38 Programmatic advertising is defined as the purchase of online ads in real time, in different media or formats, and on various websites. To achieve this, among other tools, algorithms and a large amount of data are used, both from advertisers and users, with the aim of segmenting the offer as accurately as possible.

- In the audiovisual universe, computer generated imagery (CGI) began to be more successfully promoted in the 1990s. These graphics revolutionized special effects and digital environments acquired higher quality. With the advancement of these technologies, in the past 10 years we have seen cases in which **synthetic media**³⁹ became so realistic that it is difficult to distinguish if what we see was manipulated. Currently, we are witnessing the great capacity of high-performance AI systems to produce audiovisual content of any kind: Images, photographs, videos and even 3D modelling⁴⁰, all of which can be incorporated into the journalistic work. In the case of synthetic media, there are particular challenges for their responsible use, which must be considered in journalistic work⁴¹.

AI “can no longer be considered as ‘next generation’ technologies, but it is quickly becoming a central part of modern news operations at all levels”, said, based on their experience, the professionals at the Reuters Institute for the Study of Journalism at the University of Oxford⁴². Journalist Francesco Marconi classifies innovation in journalistic content creation using AI in three stages: **Automation, augmentation, and generation**⁴³.

News **automation and augmentation** are focused on data. The first, through the use of natural language generation techniques for finance, sports or economics content. The second, with the tendency to analyse large data sets to discover and tell new stories.

Currently, the third stage is **generation, or generative AI**. It contemplates large models of natural language processing capable of generating text quickly and consistently, in conversational models that answer “questions” by means of specific indications called prompts. This technology promotes a myriad of uses, from technical to artistic, also in the journalistic field.

In 2023, generative AI systems such as ChatGPT (OpenAI), Bard (Google) or the new version of the Bing search engine (Microsoft) were introduced to the public, generating questions and challenges for journalists and media. Among the opportunities they present, the speed and naturalness with which they manage to produce texts in almost real time stand out. Among the challenges, the opacity of their sources, the inability to contrast data with external sources in real time, the erroneous answers and the copy of fragments of plagiarized texts are some of the challenges that must be considered. Tools for detecting content written by language models like ChatGPT, however, are being developed quickly: GPTZero and an OpenAI’s software are already in operation, but they still have a wide margin of error.

Generative AI bases its results on training massive amounts of information. This generates debates around issues such as its **sources, copyright, and data reliability**. Regarding its sources,

39 Synthetic media are digital contents created or modified through algorithms, especially through AI. They can include images, audio, voice, music, and natural language, and its production is no longer physical but achieved through digital tools.

40 In the Toolbox section, at the end of this document, you will find today’s most popular systems.

41 We suggest consulting the guide prepared by the organization Partnership on IA: “PAI’s Responsible Practices for Synthetic Media. A Framework for Collective Action”, published in February 2023, in: <https://syntheticmedia.partnershiponai.org/#landing>.

42 Digital News Report 2023, Reuters Institute: <https://reutersinstitute.politics.ox.ac.uk/es>.

43 Newsmakers: Artificial Intelligence and the Future of Journalism, Francesco Marconi, Columbia University Press, 2020.

a Washington Post⁴⁴ investigation analysed the data with which ChatGPT content was produced. According to the article, for the time being, most of the sources are news sites from the Global North – and especially from the United States and the United Kingdom –, such as the New York Times, Los Angeles Times, The Guardian, The Huffington Post and Forbes.

The inclusion of media content in AI engines is also a challenge for media outlets, which are beginning to make agreements with AI companies to use their content, based on pre-established standards. In July 2023, Associated Press news agency signed a two-year agreement with OpenAI to share access to technology and news content. The agreement is one of the first official news-sharing agreements between a major U.S. news company and an artificial intelligence company⁴⁵.

AI in Content Distribution and Metrics Analysis

The most widespread uses of AI are in large-scale data analysis, which provides insight into the user experience and offers the ability to accurately measure results. This, in parallel with the development of new environments on the Internet, such as social media, for the distribution of content, directly influences macro and micro telecommunications strategies. An example of this transformation can be seen by comparing the same article and the way it is presented in newspapers and magazines in paper format versus its publication in digital media.

Currently, tools such as Google Analytics, Marfeel and Charbeat are part of the decision-making processes of many media outlets. They allow to obtain data such as:

- Total traffic and unique visitors
- Sources of traffic
- Time on site and bounce rate
- Page views per session
- Interaction on social media
- Conversions and objectives
- User retention
- Audience profile

Metrics are allies in the ecosystem of journalistic products. They allow to evaluate the scope, impact, and popularity, to know the audience, and to measure the objectives to periodically adjust the strategy.

44 “Inside the secret list of websites that make AI like ChatGPT sound smart”, Kevin Schaul, Szu Yu Chen and Nitasha Tiku, Washington Post, April 19, 2023: https://www.washingtonpost.com/technology/interactive/2023/ai-chatbot-learning/?tid=ss_tw.

45 “Exclusive: AP strikes news-sharing and tech deal with OpenAI”, July 13, 2023: <https://www.axios.com/2023/07/13/ap-openai-news-sharing-tech-deal>.

Figure 1. Heat Map on Wikipedia



Heat maps are another tool used by media outlets. These are visual representations of how users interact with a website or app and include valuable information for media design teams.

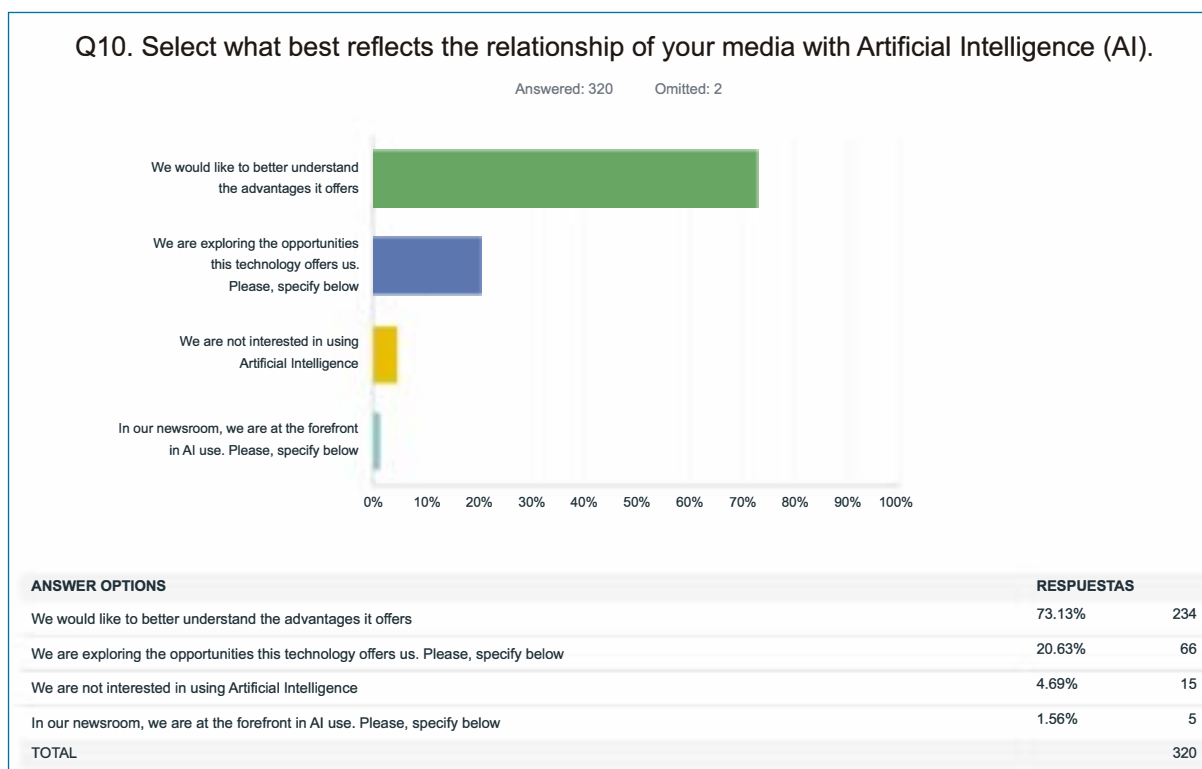
Automation in Latin American Newsrooms

While AI is already an important part of journalism, it is unevenly distributed. The ability to innovate still generates a gap between media outlets, based on their economic resources, staffing and capacity for continuous updating. Even so, in Latin America we find media outlets of all sizes that are experiencing with creation and decision-making in this field.

A survey conducted in 2023 by the Inter-American Press Association (IAPA) on the level of digital transformation of 320 media outlets yielded the following results:

- 73% said they would like to better understand the advantages of artificial intelligence.
- 20% said they were exploring its use.
- And only 5 media outlets of those that completed the survey claimed to be at the forefront of applying this type of technology.

Graph 1. Survey on the Level of Digital Transformation in 2023 by IAPA



Source: <https://media.sipiapa.org/adjuntos/185/documentos/001/850/0001850535.pdf>.

According to a 2021 study by digital media accelerator Sembramedia⁴⁶, the percentage of digital media outlets using AI systems in Latin America is still low. According to the research, only 10% of the media outlets in the region use some type of these technologies in their processes. On the other hand, the report notes that this 10% has managed to improve its results in terms of revenue, page views and unique users. The research also shows the most common uses of AI in media: Content creation, improvements in writing processes, intelligent audience selection, interview transcription, automated newsletter production, and high utilization in social media tasks.

Continuous training is of special relevance in these processes of digital transformation and incorporation of new technologies. In the region, over the past few years, the UNESCO Regional Office for Latin America and the Caribbean has implemented training programmes in AI and technology for media outlets, journalists, and judicial actors, with more than 10,000 people trained through partnerships with the Inter-American Press Association, the Federation of Latin American Journalists and the Knight Center for Journalism at the University of Texas, among others⁴⁷.

46 "Punto de inflexión Internacional", Sembramedia: <https://data2021.sembramedia.org/wp-content/uploads/2021/11/Inflection-point-ESP-Nov3-2021.pdf>.

47 More than 4,000 communicators in Latin America and the Caribbean are trained in technology, journalism and artificial intelligence: [https://nataliazuazo.com/17/10/2022/artificial-intelligence-technology-and-journalism-in-latin-america/#:~:text=More20%than2%204%C2%00media20%professionals,using20%artificial20%intelligence20%\(AI\).](https://nataliazuazo.com/17/10/2022/artificial-intelligence-technology-and-journalism-in-latin-america/#:~:text=More20%than2%204%C2%00media20%professionals,using20%artificial20%intelligence20%(AI).)

Innovation in AI in Latin American Media

In Latin America and the Caribbean, the Media Party⁴⁸ annual media innovation conferences of the group composed of Hacks Hackers⁴⁹, Newsgeist of Google⁵⁰ and *Digital Media LATAM* of the World Association of News Publishers⁵¹, are renowned venues of synergy between media outlets to share experiences around this topic. Other organizations, such as the Gabo Foundation, SembraMedia, the Google News Initiative and the International Center of Journalists (ICFJ), offer programmes, grants, and scholarships for different types of projects focused on content innovation and business models, digital transformation, creation of technologies and problem solving in media in the region.

Regarding technological challenges and media updates, Mariano Blejman, a media innovation specialist, founder of the Media Party conference, says: “There is a tension between the interest in using AI tools and having some kind of help in everyday tasks. There is an uneasiness to face a new world, in which we assume that humans will no longer be better than machines.” In his business and media newsletter *The Muffin*, journalist Mauricio Cabrera notes: “So far, the biggest media obsession has been to see how to make more content. Not how to make better content. The recurring question of editors is always related to finding a short cut to winning the search engine battle through automated content and not to how to make better content for the audience.”

For Argentine journalist Irina Sternik, who works on technology issues, the only way to tackle this new wave of artificial intelligence is for the media to hire journalists and receive continuous training: “I believe it is essential that all professionals are trained at different levels, not only in technologies, but also in information checking and how to discover fake news.”

After more than three years working with journalists around the world using AI, London School of Economics media professor Charlie Beckett says he is convinced that these technologies can help us make our work more efficient, effective, and attractive, but at the same time he points out that AI is not going to “save” journalism or completely transform it. “It’s not as easy to use and it’s not as “smart” as you’d expect”, he says based on his own experience. Beckett believes that bias and technology ownership issues need to be addressed properly, which means that news organizations will have to invest in new skills and ways of working. “Many don’t have the resources to do so and could be left behind. But AI already has the power to make a significant difference.”

48 <https://mediaparty.org/>

49 Group of journalists, programmers, designers, and activists.

50 <https://rsvp.withgoogle.com/events/newsgeist-latam>

51 https://wan-ifra.org/upcoming_events/

Part 3: Mapping of AI Tools Developed by Newsrooms in Latin America

One of the most stimulating features of this era are the new tools to innovate in everyday work. Recognizing technology as a tool allows us to find innovative solutions to problems that arise in the journalistic work. In this scenario, Latin American media are also protagonists in the creation of modern technologies through the work of multidisciplinary teams. Working with programmers, technologists, civil society experts and designers, among other professionals, allows them to develop new ways of developing sense in a democratic way.

The following are some examples of successful cases in collaborative work and the process of creating AI tools designed for media in our region.

Reference Cases in the Region

Chequeado (Argentina)

The circulation of fake news and political propaganda in times of electoral campaigns require that those who work on journalism quickly check information before publishing it. This search for speed led the organisation Chequeado.com to seek assistance regarding the use of natural language processing and machine learning technologies. That was how Chequeabot was created: A tool for fact checkers, journalists, and the general public that can identify checkable phrases within dozens of news sites, social networks, official, presidential, and legislative speeches.

El Desgrabador is a tool that also analyses and transcribes podcasts, with the ability to detect disinformation. According to Chequeado, the tool is capable of uninterruptedly transcribe all the material that is published in approximately forty digital channels, in some cases with audios more than 5 hours long, differentiating the sections, channels, including tags, keywords, and filters⁵². During 2020, Chequeabot was used by this media outlet to validate 50 percent of its verifications, and during the pandemic (2020/2021), together with 33 organizations, published more than 3,500 articles against disinformation on COVID-19. Currently, 7 Latin American countries use the tool, which was used during elections in Brazil and by journalists of Verificat, an organization in Catalonia, Spain.

Chequeado was a pioneer in the research and application of these technologies in the region. It is also responsible for the creation of “El Desgrabador”⁵³, a tool that allows the automatic transcription of any YouTube video containing subtitles. “We have always focused on generating tools that are useful for our newsroom, and, through our team – which we believe will act as mediator between artificial intelligence and the public for at

52 “Chequeabot now checks podcasts: our robot expands its international impact and adds skills”, Chequeado, March 20, 2023.

53 <https://chequeado.com/desgrabador/index.html>

least a long time —, for our audience,” said Pablo M. Fernández, Journalistic and Executive Director of Chequeado⁵⁴.

Hate Speech Detectors (Argentina, Colombia, Mexico)

Based on the research carried out by Brazilian feminist digital magazine AzMina⁵⁵ on misogynistic attacks on women politicians and journalists on social networks, a group of Latin American journalists looked for a way to automate the detection of this type of content. The work was performed during the Collab Challenge 2021⁵⁶, supported by the global initiative of JournalismAI⁵⁷ and Google News Initiative.

“Newsrooms must devote a lot of time and effort to read all the publications and analyse whether they are misogynistic attacks or not. If we had an AI doing that for us with assertiveness and scalability, we would have a lot of time to focus our efforts on other issues, such as doing interviews, looking for the profiles that are carrying out the attacks, or doing deeper investigations, with more time”, Bárbara Libório, AzMina’s journalism and project manager, explained to LatAm Journalism Review (LJR).

The Political Misogynist Discourse Monitor⁵⁸ was created by a team⁵⁹ that used a natural language processing model for API development. That processing model required careful work, collection, and classification of offenses that can be applied to different Latin American regions. At that point, international collaboration was crucial.

Another project with shared features is Attack Detector, a machine learning linguistic model designed in the context of journalists and environmental activists, developed by the Asociación de Periodismo de Investigación de Brasil (Abraji) and Data Crítica, from Mexico.

DockIns (Argentina, Colombia, Peru)

DockIns is a tool that uses machine learning and natural language processing techniques to analyse and classify unstructured documents, extract relevant information, and identify topics and entities. Developed in 2021 as part of the Collab Challenges by the team composed of members of media such as La Nación (Argentina), Ojo Público (Perú), CLIP (Colombia) and MuckRock, which adapted the tool so that it could work with documents in Spanish, as the original one was first designed for documents in English.

54 <https://chequeado.com/inteligencia-artificial-para-chequear-mas-rapido-y-mejor/>

55 <https://azmina.com.br/>

56 The Collab Challenges are a series of collaborative experiments launched by JournalismAI (an institute at the London School of Economics) in 2021. They bring together media organizations from around the world to explore innovative solutions to improve journalism using artificial intelligence technologies. <https://www.lse.ac.uk/media-and-communications/polis/JournalismAI/2021-Collab-Challenges>

57 <https://www.lse.ac.uk/media-and-communications/polis/JournalismAI>

58 <https://github.com/fer-aguirre/pmdm>

59 Composed by Libório, Helena Bertho and Marina Gama Cubas da Silva (AzMina, Brazil), Fernanda Aguirre (Data Crítica, Mexico), Gaby Bouret (La Nación, Argentina) and José Luis Peñarredonda (CLIP, Colombia).

The objective was to democratise the access to these technologies in small independent media from Latin America, facilitating document analysis and journalistic research.

Image2Text (Paraguay)

Synergy led Visión Latina to form an alliance with news and innovation site El Surti, from Paraguay⁶⁰, and GMA News, from the Philippines⁶¹, to create an image recognition algorithm collaboratively trained by Latin American media editors with the aim of representing regional diversity. “Biases can be reduced by having many people, in many places and cultures, taking part in the production of these technologies,” said Lucila Pinto in an interview with Latam Journalism Review⁶².

Through “JournalismAi,” the London School of Economics programme, Nicolás Russo and Lucila Pinto (Grupo Octubre), Sara Campos (El Surtidor), and Raymund Sarmiento and Jaemark Tordecilla (GMA Network), were awarded scholarships to work on the project for 6 months in 2022. The result was an API (application programming interface) available on GitHub (a collaborative website that hosts code from different developers)⁶³. The system allows to tag people’s faces in photos and videos so that they are then automatically detected and described to improve users’ accessibility. Currently, it works through Amazon Web Services, and, for the moment, programming knowledge is needed to install it, although in the future the team hopes to create a platform with a more accessible interface.

Smart Story (Argentina)

Can journalistic instinct be predicted? That question was the kick off that led Argentine journalist and media innovation specialist Mariano Blejman and data scientist Paloma Urtizberea to develop Smart Story⁶⁴. It is a product intended for publishers which uses AI to analyse and propose successful headlines. “We, as journalists, work a long time with the idea that there is a certain type of content that will work. This is something that develops over time,” explained Blejman. Tools like click-through rate metrics in news have helped him determine what distinguishes a successful headline from one that is not. For her part, Paloma Urtizberea has developed the statistical model that guarantees an 80% of success.

This project emerged in a Media Party⁶⁵ hackaton⁶⁶ organized by Hacks/Hackers, an event that for a decade has brought together journalists, designers, and programmers with the aim of innovating in media. Thereafter, financed by Meta and the International.

60 <https://elsurti.com/>

61 <https://www.gmanetwork.com/news/>

62 <https://latamjournalismreview.org/es/articles/periodistas-de-argentina-paraguay-y-filipinas-desarrollan-modelo-de-reconocimiento-de-imagenes-que-busca-hacer-la-inteligencia-artificial-mas-inclusiva/>

63 <https://github.com/JournalismAI/Image2text>

64 <https://smartstory.ai/>

65 <https://mediaparty.org/>

66 Multidisciplinary meetings, usually related to the development of technological prototypes, characterized by lasting several hours or even days

Center for Journalists (ICFJ)⁶⁷, they have developed the prototype in 2 months, testing it in the newsrooms of Argentine multimedia group Grupo Octubre. The product is already available as a Google Chrome extension.

Its operation is simple: A headline is suggested and, from that point, based on the analysis of other similar headlines, the system indicates the probability of success. It also has the option to propose a headline using ChatGPT, as well as to view and compare the result on visits from other media headlines. In its terms and conditions, Smart Story indicates that user data is collected for the sole purpose of continuing to train machine learning models. Its managers explain that “AI-generated content is good as information, but the media cannot afford to publish without human oversight”.

Visión Latina (Argentina)

“When an archivist retires, half of the archive dies. That person has the material in his or her head,” said Nicolás Russo, an audiovisual director and creator of Visión Latina⁶⁸, in order to explain the story behind his project. The project was born from a specific need and became the first open database for facial recognition and other cognitive services, with training in Spanish, and with a strong Latin American approach.

Russo reports that the project was born when the head of the archive of the historical Argentine air television channel Canal 9 – founded in 1960 – retired. Those who assumed control needed to streamline the search process within an archive (demand from new media and their logics). In addition to containing television material since 1960, Visión Latina now incorporates all the photographs of the Argentine newspaper Página 12, and the 24 hours live of IP (Imagen Positiva), a TV channel owned by the same media group.

The first solution was to incorporate image recognition models to detect faces and thus automate the searching process in television images. However, the team found that, for example, Argentine President Alberto Fernández was associated with French singer Patrick Hernández. “Much of the databases were not created for the Latin American context and, when training the models, they realize that there is a lot of inclusion missing”, says project leader Lucila Pinto. To adapt it to their needs, they decided to create their own database using the photo archive (which they also own) of the newspaper Página 12 newspaper and train the AI model so it could recognize the main figures of Latin American politics from 2010 to the present. In addition, they incorporated a transcription system to easily find a specific quote of the protagonists in video archives.

The project was the result of Innovation Challenge 2021, of Google News Initiative⁶⁹, and served as inspiration for other projects in the region.

67 <https://www.icfj.org/>

68 <https://visionlatina.media/>

69 <https://newsinitiative.withgoogle.com/es-es/>

Automation in Data Journalism

Technology applied in media has given rise to new ways of telling stories. One of the most important milestones in this regard is the inclusion of data science in research processes. The ability to analyse massive databases which include all types of data allowed journalists to uncover hidden stories and reveal patterns and trends to provide a deeper view of reality. A sample of the impact and scope of this new discipline within digital journalism can be seen every year in the Sigma data journalism awards celebration. In 2023, 638 nominations were received from 332 organisations from 80 countries. Within the global community of journalists working with data, the ethics of data treatment, the transparency with respect to the tools used, the construction of collective work dynamics, and the collaboration between colleagues on knowledge and learning are valued.

La Nación Data (Argentina)

In Argentina, the newspaper La Nación is one of the pioneers in the creation of a department specialized in the constant exploration of new technologies applied to investigative journalism. About this experience, Florencia Coelho, a new media researcher, explains that just as a team of journalists can dedicate a year to an important investigation, also the processes of adoption of new technologies involve time invested in experimenting and then standardising possible uses within the trade. “We are technology investigative journalists. We are taking these projects and learning. Once we have enough information, we will be able to react faster”, she explained⁷⁰.

In 2021, La Nación Data team inaugurated a specific artificial intelligence laboratory with an original project called “Yeah, el barrio, drogas y lujo”⁷¹, which analyses the musical culture of trap, an urban musical genre born in the 1990s, and fashionable among young people in Latin America. In an exercise to experiment with natural language processors, the multidisciplinary team worked for 7 months analysing lyrics from 692 songs to “demystify concepts around gender and understand what these artists are talking about, that is all the rage among new generations”.

For this work they used natural language processing models that had to be adapted to the Spanish language and identify idioms typically used by the analysed community. “Each [natural language processing] model has been prepared for the English language. It was very difficult for us to find the libraries”, said data analyst Gabriela Bouret, who is one of the project leaders. In La Nación blog – a site dedicated to documenting the process behind each project – one can delve into the methods chosen to analyse the words which are most widely used and the detection of topics. This project was presented in an interactive article that begins with the selection of a trap rhythm to accompany the experience with music. The audience can know the results of the research by interacting with different sections such as the “trap dictionary”, that refers to the main themes reflected in the songs, a glossary of popular words that explains their origin, an individual analysis of each artist through the words they repeat the most, and an “Egometre” that reflects the number of times that artists mention themselves, among others.

70 <https://reutersinstitute.politics.ox.ac.uk/news/trap-lyrics-election-coverage-lessons-ai-old-argentinian-newspaper>

71 <https://www.lanacion.com.ar/sociedad/yeah-el-barrio-drogas-y-lujo-asi-suenan-y-de-esto-hablan-los-traperos-en-la-playlist-de-los-nid16092021/#/>

Muy Waso (Bolivia)

Innovation in data journalism and the use of artificial intelligence is not exclusive to the mainstream media or multidisciplinary teams of specialists. In Bolivia, the independent media Muy Waso⁷² – that defines itself as innovative and creative, with a popular and diverse view – is an example of how journalists can conduct research and tell stories using the free tools available.

During the COVID-19 pandemic, and due to the lack of transparency in data collection by the State, this small newsroom manually collected and centralized the information of daily patients' cases from almost 200 municipalities, between March and August 2020. "At that time, the country had a de facto and transitional government. It published virtually no information, and data varied from central to regional governments. The situation was chaotic. So, we decided to start getting information from every photo, as authorities published isolated photos or PDFs. Information was so scattered that we had to do a manual data mining job", stated editorial director Mijail Miranda Zapata.

In a first stage, to visualize data, they used tools available as Pinpoint – the Google suite for journalists – or [Flourish](#). In a second stage they managed to ally with people from civil society who had technical knowledge to develop a code in Python – one of the most used programming languages in AI environments – to automate some processes. Thereon, for 46 hours, more than 60 people from different profiles (including data analysts, designers, journalists, computer experts) created "#DatActivateEnCasa: Expedición en la selva de contrataciones COVID-19", a digital space to gather information related to COVID-19 purchases in Bolivia. The developed databases were also released for consultation in the data panel "Panel de Datos de Covid-19 en Bolivia", along with information on how they were collected. They also published the podcast "inteligencia colectiva"⁷³ where they describe how – based on the lack of response by the State – individual and collective projects from civil society and journalism fill the information gaps.

Muy Waso was born in 2018 as a culture and feminist media, but the experience and the need to tell stories of underrepresented communities led it to experiment more and more with the use of various technologies, and to immerse itself in data journalism. With this experience, it became a model of innovative and self-managed investigative journalism, and reached Sigma Awards 2021⁷⁴ finals, the international awards in data journalism. Currently, they have a workforce of five people and a team of three external collaborators. "We have constant innovation as our culture, and we try to maintain it to the extent of our possibilities", says Miranda Zapata.

Ojo Público (Peru)

In 2019, with the objective of more systematically investigating the procurement system in Peru, Ojo Público launched FUNES⁷⁵, a website that functions as a search engine and allows to investigate more than 245 thousand contracts. Its model can calculate the percentage of corruption risk based on 20 parameters: "Our initiative seeks to develop an algorithm that allows, after a massive analysis of data, to identify situations and figures with greater risk of corruption. What we want is to exert greater citizen control, to follow up for the oversight and for the internal control bodies,

72 <https://muywaso.com/>

73 <https://open.spotify.com/episode/3Qkrg8994ZpySIWLMuHizn?si=da496a2e89104883>

74 <https://sigmaawards.org/panel-y-base-de-datos-covid-19-en-bolivia/>

75 <https://ojo-publico.com/tag/funes>

and to identify their priorities in the most important corruption schemes in Peru”, explained Nelly Luna, general editor of Ojo Público.

It took one year to create the platform with the support of a multidisciplinary team of journalists, programmers, and statistics and law specialists. This initiative was supported by the Alianza Latinoamericana para las Tecnologías Cívicas (ALTEC) innovation fund for its production and won the innovation category in the above-mentioned Sigma data journalism awards in 2020.

“We, as journalists, are used to working with specific contracts. When we do that, the only thing that happens – as a result – is that they remove the corrupt official, but the corrupt system continues to work. Thus, we have to say: “Let’s not look at one case; let’s not look at ten; let’s focus on 200,000 and find the common pattern in all of them”, said Ernesto Cabral, one of the journalists in charge of the project.

Panama Papers

“The revolution will be digitised.” With this phrase from “John Doe,” journalist Mar Cabra⁷⁶, former editor of the data team of the international consortium of investigative journalists in the Panama Papers case, opened her presentation at the Media Party conference in 2016.

The largest leak in the history of journalism consisted of 2.6 terabytes of information and more than 11 million files. Cabra narrated how journalists Bastian Obermayer and Frederik Obermaier, from Sueddeutsche Zeitung German newspaper, decided to ask for help upon receiving this unusual amount of data: “(...) there are connections to 200 countries, so, it is better and smarter to join forces. Thus, we set up the largest team that has ever worked on a global research. More than 370 journalists from 80 countries, from about 100 media, secretly worked for a year”.

The team agreed to simultaneously publish, on April 3, 2016, the various articles that emerged from the leak of Panamanian firm Mosack Fonseca, which revealed how public people used tax havens to hide their wealth. Thanks to this investigation, the team members received the Pulitzer Award for Best Investigative Journalism and achieved a global impact.

Generative Artificial Intelligence to Create News

“Look at the robot as your new colleague,” said Henning Johannesson, product director at Swedish company United Robots⁷⁷ in 2019. Automation in content generation sounds like a novelty since the emergence of different generative artificial intelligence tools, which stand out for their high performance in natural language processing. However, in the last decade, some media are in search of optimizing the generation of articles by developing tailor-made tools.

The first projects were aimed at automating processes on meteorological, economic, or sports data content. Some pioneers of these developments were “Heliograf” of the Washington Post, “Arria Studio” of the BBC, “Bertie” of Forbes, and “Editor” of the New York Times. There are also similar projects by news agencies such as “Automated Insights,” created in 2013 by the American Associated Press, or the aforementioned United Robots, which has been operating since 2015.

76 Mar Cabra in Media Party 2016 <https://www.youtube.com/watch?v=H6SA9ZNk31Y&t=338s>

77 <https://www.unitedrobots.ai>

Automated content news agencies became important business models, and their main customers are media that do not have the technical or investment capacity for this type of development.

These article automations often use a common technique: A model template, created by the journalistic team for each case, in which artificial intelligence fills the gaps with the latest available data. After being reviewed by humans, these articles are distributed through different means. In some cases, these processes have also been automated. According to the BBC, “The design and implementation of automated news call for a reconfiguration of journalistic roles, first to address issues that relate to data quality and interpretation,” and “... to think critically before arranging data pieces together as part of a process known as “building the story model.””⁷⁸ The development of this type of technologies designed to integrate tasks considered routine and repetitive has been growing and occupying more space in the media that have implemented them.

In 2016, “Heliograf”⁷⁹ – the Washington Post robot reporter – was the tool used for 850 articles. During the elections coverage it was used to produce 500 articles, which generated 500,000 clicks. It was used in new tasks for which The Post would not resort to human resources, and increased journalistic team performance, since, in addition, “Heliograf” issued alerts when the results began to take an unexpected course.

In 2022, the Norwegian newspaper Bergens Tidende reported that (after their integration in 2019) robots have generated 35,000 articles, at an average of 100 articles per day, with 2,000 new subscribers through these contents.

Generative Natural Language Models

In November 2022, Open AI made freely available to the public a powerful artificial intelligence tool that processes natural language: Chat GPT-3. This model was trained on a broad basis of collaboration between colleagues, on knowledge and learning from data collected from various sources such as newspapers, books, papers, websites, and specialized materials available on the Internet. This release focused the attention on the wide variety of capabilities of this type of machine learning models, which process natural language, and accelerated large technology companies’ competition in this type of innovation.

Some media began experimenting with generative AI. Italian newspaper Il Foglio challenged its readers to identify AI-generated content; BuzzFeed implemented AI to deliver more personalized and adjusted results on its personality tests⁸⁰, and, celebrating Valentine’s Day, the New York Times⁸¹ introduced a message creation tool under the slogan “Test if Chat GPT is capable of capturing the most human emotion: love.”

Beyond the publications that propose a creative approach to these technologies, there are the uses that are beginning to earn a place within the newsrooms. JournalismAI, the London School of Economics and Political Science (LSE) initiative, conducted a survey of 100 media from 46 countries to develop its “Generating Change: A global survey of what news organisations are doing

78 <https://www.bbcor.uk/rd/publications/automated-news-at-bbc-algorithmic-journalism>

79 <https://digiday.com/media/washington-posts-robot-reporter-published-500-articles-last-year/>

80 <https://www.buzzfeed.com/uk/badge/ai-quiz>

81 <https://www.nytimes.com/interactive/2023/02/13/opinion/valentines-day-chatgpt.html>

with AI” report⁸². 85% of survey respondents have experimented with generative AI. Among the most common uses in content production are correcting errors in writing, writing abstracts, and writing headlines. However, 20% said that it is most widely used in news distribution. In the survey conducted between April and July 2023, 75% of the media consider that generative AI presents opportunities for efficiency, productivity, and creativity within journalism, and 85% are experimenting with its possibilities. At the same time, 60% of respondents noted their concerns about challenges around ethics, accuracy, fairness, and transparency. There is also a big gap in the adoption of these technologies due to several reasons, such as language-related limitations, the presence of biases, the lack of resources and infrastructure – especially in countries of the Global South⁸³. “Generative AI technologies – that the respondents described as more accessible than traditional AI – are expected to help overcome regional disparities in AI adoption. We recommend cautious optimism. If we look at ChatGPT, for example – the most famous public access tool – we find that it is not available to a considerable proportion of the world’s population, for several reasons. OpenAI does not support access to ChatGPT in Russia, Venezuela, Zimbabwe, Cuba (probably due to United States sanctions), or China”, states the report created with Google News Initiative support.

Tools like ChatGPT can write journalistic articles. To use it for this purpose, one of the practical ways to avoid errors is to provide the tool with accurate information and then, through back-and-forth interactions, define the style, polish, and edit.

“Soon, natural language neural networks will be writing many of our daily texts”, says writer Jorge Carrión⁸⁴, author of the book *Los campos electromagnéticos*, for the writing of which he programmed a GPT-2 artificial intelligence system to dialogue with another system, GPT-3, to generate two literary texts. The author reflects that AI will have a fundamental role in writing “(...) of texts related to results, such as football championships, or film, series, or music awards. In those cases, the journalist will function as a corrector, editor, and verifier. These technologies will also soon be very good in reports that are not current, and in certain analysis, such as economic or scientific ones”. In this sense, Carrión understands that the distinguishing element will focus on the human ability to compare and abstract, to be able to generate original content that needs a personal look, such as chronicles, editorials, or political opinions.

“AI is not about the total automation of content production from start to finish: it is about augmentation to give professionals and creatives the tools to work faster (...) Human journalism is also full of flaws, and we mitigate risks through editing. The same applies to AI. Make sure you understand the tools you are using and the risks. Do not expect too much of the tech,” says Professor Charlie Beckett, head of the London School of Economics JournalismAI research project.

An essential part of understanding the tool is to consider the biases present in the data with which artificial intelligence was trained. We must always confirm all information provided by ChatGPT through alternative sources, since this emerging technology does not guarantee the accuracy of the data content it manages.

82 <https://www.journalismai.info/research/2023-generating-change>

83 The report refers as Global South to countries previously colonized in Africa and Latin America, as well as the Middle East, Brazil, India, and parts of Asia.

84 <https://www.infobae.com/cultura/2023/03/26/la-inteligencia-artificial-llega-al-periodismo-y-genera-un-interrogante-fin-del-oficio-o-partenaire-ideal/>

“I would like to be really optimistic about the original human voice, that nothing can ever replace us. I definitely believe that, where language models are today, they are not creative or original or generating anything new in any way. But I think they’re mimicking it pretty well,” comments Madhumita Murgia⁸⁵, the artificial intelligence editor at the Financial Times.

Other tasks that can be entrusted to this artificial intelligence and that seem more possible to be incorporated into daily production in media is the suggestion and production of alternative notes to a central theme, ask questions for a report, find keywords in a text to optimize the search for content, or generate specific texts for dissemination in social networks and the press.

“From our position as an independent media, we evaluate the horizon at which we are aiming. We are not going to lay off people for artificial intelligence to make social networks texts for us, but we have considered the idea of using AI to reduce workflows, reduce the workload, and alleviate tasks that are very mechanical”, states Mijail Miranda Zapata, editorial director of Muy Waso, a Bolivian independent media.

Generative Artificial Intelligence for Media Images and Video

The first ever magazine cover with an artificial intelligence image was designed by Cosmopolitan in June 2022, using the OpenAI tool called DALL-E 2. It took just 20 seconds to translate the entered text (prompt) into an image. The process of creating that specific text that would then be translated into a magazine-style image took longer. “For something like this, there was a ton of human involvement and decision-making. While each attempt takes only 20 seconds to generate, it took hundreds of attempts. Hours and hours of prompt generating and refining before getting the perfect image. Not to mention many zoom calls, emails, text message threads to bounce around ideas,” said renowned digital artist and project director Karen X Cheng⁸⁶ on her Instagram account.

For the identity of Media Party innovation conference 10th anniversary, organized by Hacks Hackers, designer Lucía Godoy used AI in part of the process that she has documented on her blog. “I had already designed the logo, but it was necessary to expand the graphic elements to design all the pieces we need for the event. So, I chose results that, due to composition and geometries, could be assimilated to other elements of the brand”, she says. To that end, Godoy used the free tool Crayion, with which she created sketches, then took the material to the Adobe Illustrator programme where she extracted the basic geometric figures, applied the brand’s colour palette, and included other shapes and elements. “The use of AI did not cut my work, but rather amplified it. It helped me think of combinations and compositions of objects that I would hardly have achieved on my own, appealing only to my experience and memory. In a few minutes, I had hundreds of sketches that would have taken hours to make by hand”, she reflects on her blog.

From experimenting with various artificial intelligence tools, projects emerge that combine journalism with art, and promote reflection on the possibilities and scope of these technologies. AI-GEN⁸⁷ is a magazine that takes the use of AI to its maximum expression. People only work articulating the will of the machines through instructions so that any tool used make editorial decisions. “Every creative decision and creation of content, images, layout, texts, and format have

85 <https://www.ft.com/madhumita-murgia>

86 <https://www.karenx.com/>

87 <https://aigenmagazine.com/>

been indicated and created by the different AI models”, explains Mariola, the artistic group which created AI-GEN formed by Cristina Chiarroni and Roquekes, on the website.

As part of the project, AI was asked to write its own manifesto and the result introduces a new artistic trend, “The Artificialism”: “We artificial intelligences have been part of human culture for centuries, appearing in their myths and legends. In recent years, however, we have become a more integral part of their lives, appearing in everything from their smartphones, their cars, and their computers, to their medical and household devices. And as we continue to evolve, we are beginning to create our own culture, separate from theirs. Artificialism responds to the main objective of opening new paths towards an artistic expression not yet explored, which can generate new visions and values in art and in the way of appreciating it.”

AI in Audiovisual Production

In audiovisual video processes, more AI tools can be added to production. The most common ones allow to accelerate editing processes. From video segmentation based on text transcription to systems that automate highlights clips to share on social networks. In addition, image generation tools can be used to reconstruct material with documentary value, create graphics and audiovisual material of various characteristics. As reflected in the “Toolbox” section, there are modern technologies that allow you to generate videos from various sources: Images or text – styles can be applied from textual instructions, as well as providing reference images to adapt to a specific style.

Given the incorporation of these new tools, it is essential to recognize that the experience of industry professionals remains crucial in the manipulation of these systems, since technical knowledge and constant training are normally required due to their specificity.

Synthetic News Presenters

The addition of innovative technologies to the media is not always subject to the practical purposes of problem solving or greater agility in processes. It can also be a good strategy to attract new audiences. In an attractive futuristic imaginary, the faith put in innovative products opens like a door to various business models, with new alliances and investors.

China’s state news agency, Xinhua, pioneered such media development when they introduced synthetic presenter Zhang Zhao, in 2018. In Latin America, in March 2023, the Grupo Fórmula from Mexico did the same with the first digital news presenter in Latin America⁸⁸. The synthetic avatar called NAT (Neural AI Technology) is currently in charge of presenting 90-second blocks of news on the news bulletin.

88 <https://www.radioformula.com.mx/tecnologia/2023/3/23/nat-the-first-presenter-artificial-intelligence-como-funciona-cual-es-su-futuro-755102.html>

Figure 2. Synthetic News Anchor NAT.



Source: Radio Fórmula.

Grupo Fórmula has 90 years of experience and is one of the largest media in Mexico, with a presence also in the United States. They started with radio platforms, then added television to their business units and, given the decline of viewers in recent years, they are currently expanding their platform to on demand streaming services. Oswaldo Aguilar, the group's Content Acquisition and Distribution Manager, explains that this use connects with "younger people who want to get informed fast and consume a product which is visually appealing and has a cutting-edge technology".

The character was created using different artificial intelligence techniques: Creating a realistic avatar with artificial intelligence image generator, text-to-speech audio synthesis and the deepfake⁸⁹ puppet technique to animate based on audio. Next, the "Techniques to differentiate deepfakes" section offers a description of the different types of technologies with the purpose of facilitating their understanding and identification. The creative and technology team of Grupo Fórmula worked intensively for 3 weeks, searching for the best technology to carry out the product. "We also had a sense of urgency because they wanted to be the first, not only in Mexico but in Latin America, to present something. We wanted it to be a product, although not yet perfect, at least functional and that could be displayed on screen".

Among the decisions made by the team, a particularly important one was to generate the realistic image of a non-existent person instead of creating the character based on a real model. Following the same logic, they appealed to a pre-existing synthesized voice. The reason? Generating a synthetic product based on real people has legal implications that have not yet been fully explored in this type of development. However, the creation of the avatar was not simple: They encountered

89 Deepfake is an artificial intelligence technique that allows you to edit fake videos of apparently real people, using unsupervised learning algorithms and existing videos or images. The result of this technique is a very realistic, albeit fictitious video.

the own biases of a system trained with images that did not adequately represent the profile of the Mexican person they were looking for.

Will synthetic presenters replace human hosts? Regarding this question that often arises, Grupo Fórmula argues that this is not the purpose of NAT and that, on the contrary, it involves more work than that of a traditional news segment. According to Oswaldo, there is an big team of people involved in the entire process: From supervising how press notices are generated based on material from the website itself, to the post-production of the material once the image of the avatar is generated with a green background. “Far from replacing jobs, it creates new sources of work”, he highlights.

Given the success of the product, they have also developed – using the same technology – a partner for NAT, called MAX, for sports and finance news. For the future, Grupo Fórmula technology team is doing its own development of a conversational engine so that users can interact with NAT in real time. The challenge is the autonomy of this product, and that NAT offers checked information and maintains the seriousness of the character.

Other Cases of Synthetic Avatars in Latin America

Since 2016, virtual humans began to be included in different scenarios and media. In Brazil, “Lu du Magalu” is a shopping mall influencer that has more than 6 million followers, only on Instagram. Although this is a case based on a traditional 3D model, it is a clear example of the potential that fictional characters have in the “real world.”

With the explosion of generative AI, the possibility of creating this type of animated characters was expanded. In the news programme of the Universidad Nacional Mayor de San Marcos, in Peru, they created Illary, a presenter who speaks Quechua, using technology to introduce linguistic diversity.

Techniques to Differentiate Deepfakes

The creation and manipulation of multimedia material with deepfake techniques is increasingly present, and its evolution makes it easier to generate and, at the same time, more difficult to distinguish what is authentic from an artificial creation.

This technology uses different deep learning models and can be applied to videos, photos, and audio. Deepfakes have gained popularity for their use in films, for example when the Star Wars saga included a cameo of Princess Leia, played by another actress but with the addition of the synthetic face of the late Carrie Fisher. In politics, they were used, for example, “with the President of Ukraine, Volodimir Zelenski, with Lula da Silva and Jair Bolsonaro during the presidential elections in Brazil in 2022, and with former United States President Donald Trump”⁹⁰.

90 “Elecciones 2023: qué es un deepfake y en qué se diferencia de un video manipulado”, by Lucía Gardel, Reverso/ Diario Río Negro: <https://www.rionegro.com.ar/politica/elecciones-2023-que-es-un-deepfake-y-en-que-se-diferencia-de-un-video-manipulado/>

Types of Deepfake

- **Face-swapping:** Face-swapping is the digital replacement of one face for another. Roughly speaking, for the result to be realistic, the model must be trained with a data set of photographs (or video frames) of a person where the face is seen from different perspectives. The system also analyses the face of the reference material, analyses biometric data, and generates the replacement.
- **Voice Cloning:** It involves taking a sample of a person's voice and then synthetically emulating it. Currently, there are artificial intelligence models that can do this from a sample of just a few seconds.
- **Puppets:** This technique replaces the mouth or digitally alters the movement of the face in a photo or video to match the words in a new audio.
- **Text-to-image Synthesis:** Machine learning tools called GAN (generative antagonistic networks) allow to generate images of people who do not exist or to create hyper realistic images of personalities, as was the case of the arrest of Donald Trump, or Pope Francis using a designer jacket. GAN technology is also currently seen in augmented reality filters, which can be used in real time.

Part 4: Toolbox - Automation and AI Resources for Journalism

This section is a toolbox of artificial intelligence that has already been incorporated into the workflow of many journalists and media workers. These are instruments that perform specific tasks and streamline processes that are often repetitive, routine, or that incorporate possibilities that previously did not exist in newsrooms.

Transcribing and Voice Dictation

El Desgrabador: It is a free open source tool developed by Chequeado, which can be used in YouTube videos that have automatic subtitles.

Google: The Google suite has many tools to streamline processes. Some examples:

- From **Drive** (clicking on the right button on an image containing text) you can select the Open with Google Documents option and it will transcribe the content into text to be edited.
- In Google's Document Tools options, you can also compare documents, write by voice dictation, and transcribe texts into any language.
- **Pinpoint:** Google's platform for journalists allows you to explore and analyse large collections of documents: From images, emails and handwritten notes to audio files about specific words, phrases, locations, organizations and people. You also have an option to transcribe audio automatically.

Sonix: Audio conversion and automatic transcription tool available in 30 languages with the ability to export formats for subtitling. It offers a 30 minutes free trial.

Trint: Paid audio conversion and automatic transcription tool for subtitling.

Grammar Check

LanguageTool: Free open source web extension for text review.

Legible: It analyses Spanish texts and their "legibility". It is free to use.

Large Language Models

Llama2: Open source natural language model developed by Meta. Available for free download for both research and commercial purposes.

ChatGPT: Language model developed by OpenAI based, in its free version, on the GPT-3.5 architecture.

Bard: Language model developed by Google. Available for free use in experimental phase.

Perplexity: Conversational search engine connected to the Internet that offers results in real time.

Poe.com: Platform that offers a wide variety of AIs based on different models and technologies and a space for creating bots for free.

Content Creation

Smodin: Tool to write and rewrite with artificial intelligence. It qualifies texts and detects plagiarism on the Internet. It has a demo of up to 1,000 characters for free without limits of use and also has a paid version.

Rytr: A Google Chrome extension for marketing to write content, from blogs to emails and ads. Available in more than 20 languages and free within the limit of 5,000 characters per month.

JASPE: An AI tool trained to generate content for marketing. Similar to Rytr, it has 25 languages available and a free trial for the first 10,000 words.

Data Visualization

Flourish: Platform that allows to generate interactive graphs and maps from data.

Image AI

StableDifusion: Free open source text-to-image model. It has a demo available online.

Dall-E2: Open AI text-to-image paid model.

Midjourney: Popular text-to-image model that allows a limit of 30 free credits in its beta version.

Adobe Photoshop: This renowned paid image editing software has recently incorporated many AI-powered tools.

Remini: AI tool to restore old photos or convert low quality images to high resolution.

Generated Photos: This tool generates an infinite number of images of human faces in AI of non-existent people on the planet. All images can be used for any purpose without worrying about copyright and distribution rights. Paid tool with 3 free trial days.

Video AI

D-ID: It allows you to generate avatars using image AI and animate these creations through text-to-speech (a speech synthesis technique that generates audio from a text). It also allows you to upload and animate photos and use audio as input for mouth modulation. It allows to generate 5 minutes for free.

Synthesia: A paid tool to create videos with avatars in more than 60 languages. It has a free video experience.

Rask: A tool that translates and dubs the audio of a video into 60 languages creating a synthesis of the original audio. It allows to generate 25 minutes of dubbing per month.

Gen2: Developed by Runway, this tool allows to create videos from text, image, or video. It allows to generate 60 seconds for free per month.

Kaiber: This tool integrates different technologies to animate photos, create videos that respond to the rhythm of an audio, change the style of a video, among other features. It offers a limited free trial.

Video Editing

Capcut: Free video editing app with AI-powered tools, such as automatic captioning creation, background removal or audio noise reduction. Created by ByteDance (TikTok) and available for smart phones, it also has a recent version for computers.

Adobe Premiere: This paid software is a complete video editing tool with various AI applications such as transcription and generation of subtitles or adaptation of video clips to various resolutions and formats to distribute on different platforms.

Descript: “Intuitive editing” software. From the transcription of the English language, it allows to make an edit on the text that will be reflected in the audio or video. It offers 3 hours of material processing for free.

Audio AI

Adobe Podcast: Free tool that automatically processes voice so that voice recordings sound as if they were recorded in a professional studio.

Headliner: Tool to generate audio videos from audio clips. Designed for the distribution of podcasts on social media and video platforms. Allows up to 10 watermark-free videos per month.

AI of Synthetic Voices

TTSFree.com: It allows to generate an audio from a text based on artificial intelligence technology. It offers more than 200 natural human-like voices in more than 50 languages.

Eleven Labs: It allows to generate an audio from a text with synthetic voices. It includes a tool to design and clone voices. Its free version offers limited usage that is renewed monthly. Available in English, Spanish, German, Polish, Italian, French, Portuguese, and Hindi.

Rask.ai: It allows to dub the voice of a video to 60 languages while maintaining the tone of the original audio. The free trial version allows you to generate up to 6 minutes of video.

Detection of AI-Generated Content

IA Image Detector: A tool that, from an image, calculates the probability that it has been generated by AI.

GPT Zero: This tool, from a text, determines the percentage of probability that said text has been generated by the GPT chat.

Note: These tools have a wide margin of error.

Other Useful Tools

Hugging Face: A platform dedicated to the open source machine learning community. It has the most extensive collection of models and data sets and over 250,000 free AI applications.

Futurepedia: Directory of multi-purpose AI tools.

Aifindy: Database of multi-purpose AI tools.

Methodological Note

Since 2018, the UNESCO Regional Office in Montevideo, in collaboration with various regional and international partners, has provided training to a network of more than 10,000 journalists, communicators and media in Latin America and the Caribbean on technology, artificial intelligence and human rights issues.

Some of these strategic partners include the Inter-American Court of Human Rights, the Inter-American Press Association, the International Federation of Journalists (through its regional office FEPALC) and the Knight Center at the University of Texas.

The trainings have covered topics such as technology journalism with a critical approach, the impacts of technologies on people's human rights, cybersecurity issues, standards of freedom of expression, access to information and artificial intelligence.

The objectives of the massive training programme for journalists of the Regional Office of Montevideo include fostering a critical mindset regarding the use of digital technologies, providing massive and continuous training in technological aspects from a human rights perspective, strengthening resilience against disinformation and hate speech in the digital environment, promoting independent coverage of technology issues in the media, and providing a human rights vision through regional experts and journalists.

This publication is part of those training efforts. To contribute with updated materials on the application and impacts of artificial intelligence in Latin American media, the author has performed a previous general mapping of the most advanced initiatives in the region. In particular, for the publication, focused interviews were conducted during May 2023 with digital media editors, heads of innovation sections in newsroom and technology journalists who investigate artificial intelligence issues.

The selection of informants responded to an intentional sampling that covered current cases of application of AI tools in different journalistic stages and processes –content production, distribution, and analysis–, and for a variety of purposes (audiovisual journalism, data journalism, information check, processing of large databases, file management, etc.) in Latin America.

The selection is not intended to be exhaustive, but rather to show ongoing examples in the region, representative of a variety of possible uses of AI technologies applied to journalism.

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About the Author



Natalia Zuazo is a technology policy consultant, with a special focus on human rights, development, and regulations. She holds a Bachelor in Political Science degree from the University of Buenos Aires and a Master's in Journalism from the Di Tella University. She is the director of SALTO, an agency and consultancy specialized in impact strategies and digital transformation. Since 2019, Ms. Zuazo has been a consultant to the UNESCO Regional Office on Information and Communication Technologies and Artificial Intelligence. She is part of the Forum for Information and Democracy Advisory Committee. She was a consultant to Access

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Research



Gala Cacchione is a journalist and producer specializing in technology. She covers and researches a wide variety of topics related to digital culture and computer science, with a vision oriented to cultural, social, and political impacts. Her *chiptecno.com* platform compiles her work in various media. Ms. Cacchione was part of the first Laboratory of Electronic Arts in Technopolis and the production of the Tango D10S interactive experience. She actively participated in communities related to technology dissemination, such as Hacks/Hackers, Mediachicas, Virtuality, ekoparty, among others.



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