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# Prospects for the Use of Robots and Artificial Intelligence in Journalism

**Abstract**

The quest for efficiency in the era of ultra-fast internet and vast volumes of available information has taken on special forms – robots are now entering the field of journalistic competition for audiences. Algorithms capable of processing information quickly and producing text that is virtually indistinguishable from human-written content have already been implemented by major media industry giants such as Forbes, The Guardian, Associated Press, Los Angeles Times, and many others.

Robotization and artificial intelligence (AI) have become an integral part of the modern media ecosystem. This article aims to describe the current state of these technologies and their role in updating and modernizing journalism. It presents information on the impact of robotics and AI on journalistic practice, identifies potential consequences of AI for the future of journalism, and discusses the growing influence of these technologies. Despite increasing interest, the impact of AI on the news industry and our information environment remains poorly understood. There has also been insufficient attention given to the implications of the news industry's reliance on tech companies for AI. This article examines the use of AI in editorial, commercial, and technological areas, considering the structural implications of AI in news organizations. It concludes that AI technologies will enhance, rather than replace, the work of journalists, and that artificial intelligence does not pose a threat to professional journalism.

***Keywords***: *robotization of journalism, artificial intelligence, AI in journalism, automated journalism, algorithmic journalism, journalistic ethics*

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# Jurnalistikada robotlardan və süni intellektdən istifadə perspektivləri

**Xülasə**

Ultra sürətli internet və inanılmaz həcmdə mövcud məlumat dövründə səmərəlilik uğrunda mübarizə xüsusi formalar alır – robotlar auditoriya üçün jurnalist döyüşləri sahəsinə daxil olur. İnformasiyanı mümkün qədər tez emal etməyə və insan mətnindən praktiki olaraq fərqlənməyən

mətn yaratmağa qadir olan alqoritmlər artıq Forbes, The Guardian, Associated Press, Los Angeles Times və bir çox başqaları kimi media sənayesi nəhənglərində özünü təsdiqləyib.

Robotlaşdırma və süni intellekt (AI) bu gün yeni media ekosisteminin ayrılmaz hissəsidir. Bu məqalə texnologiyaların status-kvonunu və onların jurnalistikanın yenilənməsində və müasirləşdirilməsində rolunu təsvir etmək, robot texnikası və süni intellektin jurnalistika praktikasının dəyişməsinə təsiri haqqında məlumatları təqdim etmək, süni intellektin jurnalistikanın gələcəyinə potensial nəticələrini müəyyən etmək məqsədi daşıyır. Artan marağa baxmayaraq, AI-nin xəbər sənayesinə və informasiya mühitimizə təsiri hələ də yaxşı başa düşülməyib. Xəbər sənayesinin süni intellekt üçün texnoloji şirkətlərə güvənməsinin nəticələrinə də kifayət qədər diqqət yetirilməyib. Məqalədə AI-nin xəbər təşkilatlarında struktur təsirlərini nəzərə alaraq, redaksiya, kommersiya və texnoloji sahələrdə AI-dən istifadə araşdırılır. Məqalədə süni intellektin jurnalistlərin əməyini əvəz etməyəcəyi, təkmilləşəcəyi və süni intellektin peşəkar jurnalistika üçün təhlükə yaratmadığı qənaətinə gəlinir.

***Açar sözlər:*** *jurnalistikanın robotlaşdırılması, süni intellekt, jurnalistikada süni intellekt, avtomatlaşdırılmış jurnalistika, alqoritmik jurnalistika, jurnalist etikası*

## Introduction

Robots and artificial intelligence are penetrating many professions, and journalism is no exception. Some media workers are happy to adopt new methods, others are afraid of losing their jobs, and others forbid them because of possible errors and boring writing style.

Ongoing technological disruptions and increasing competition in the digital media space have fundamentally changed the market situation for news media companies, raising concerns about the future sustainability of journalism and its practices in many parts of the world (Westlund, 2020).

At a time when global newsrooms are becoming smaller due to increasing technological advancements, robotic journalism has emerged as a threat to the fourth estate. Artificial intelligence has brought a new paradigm to modern journalism, and newsrooms around the world are facing fears of staff reductions. Automated journalism has already penetrated newsrooms with automated writing and distribution of news that has already become a reality without human supervision. In robotic journalism, also called automated or algorithmic journalism, news articles are created by computer programs and artificial intelligence rather than human reporters. The voice, tone, and style can also be changed depending on the desired outcome (Martin, 2018).

Scientists predict that in the near future, robots will search for topics (in fact, they are already searching), report news – and cope with this faster than people, and will edit texts better.

And yet, journalists today are forced to adapt and master new competencies related to the technical development of the media. The versatility of a media professional should be manifested not only in the ability to work with different channels of mass media transmission, but also in the ability to use Internet tools. The employer is counting on this.

### Research

According to teachers of higher education institutions that graduate specialists in the media sphere, they are trying to introduce subjects, courses, electives, master classes, workshops, and internships into their programs, the purpose of which is to prepare future journalists for the challenges of the modern media market.

If you are planning to connect your professional life with the sphere of mass communications, be prepared for the fact that robots will soon be your competition, and only your willingness to flexibly and efficiently respond to changes will keep you afloat. Robotic devices are occupying more and more niches, threatening to displace human specialists in most professions. There is an opinion that artificial intelligence systems will never learn only one thing – creativity. On the other hand, there are many who are sure that by transferring craft tasks to robots, people will have the opportunity to realize themselves in more interesting and enjoyable areas. Let's consider specific examples of the introduction of artificial intelligence in the media sphere. Advantages and disadvantages of robot journalists.

Artificial intelligence technologies such as Machine Learning (L), Deep Learning (DL), Natural Language Processing (NLP), and Natural Language Generation (NLG) have become more embedded in every aspect of publishers' businesses over the last few years. Indeed, these can no longer be regarded as 'next generation' technologies but are fast becoming a core part of a modern news operation at every level – from newsgathering and production right through to distribution (Newman, 2022).

In the modern world, robots are actively being introduced into various fields of activity, including journalism. The use of robots in journalism opens up new opportunities for automating routine tasks, improving the quality of content and increasing the efficiency of journalists.

**The Main Functions of Robots in Journalism**

1. Data collection: Robots can automatically collect information from various sources, such as news sites, social networks, databases and others. This allows journalists to quickly obtain data for analysis and content creation.

2. Data analysis: Robots are capable of conducting complex analyses of large volumes of data, identifying important trends and patterns. This helps journalists identify key topics and events, as well as determine the most interesting and relevant materials for the audience.

3. Editing and proofreading: Robots can act as editors and proofreaders, checking texts for errors and typos. This helps improve the quality of publications and reduce the workload of journalists.

4. Interacting with the audience: Robots can answer readers' questions, collect feedback and analyze the audience's reaction to publications. This helps journalists better understand the interests of readers and tailor content to their needs.

5. Automated distribution: Robots can automatically distribute content across various platforms, such as social networks, instant messengers, news sites, and others. This allows you to quickly convey information to the audience and expand the reach of publications.

6. News monitoring: Robots can monitor news and events in real time, notifying journalists about important events. This helps them quickly respond to news and create relevant publications.

7. Sentiment analysis: Robots can analyze the sentiment of texts, identifying positive, negative, and neutral reviews. This helps journalists understand the audience's attitude towards certain events and topics.

8. Infographic creation: Robots can create infographics based on data, which helps visualize information and make it more understandable for the audience.

9. Automatic fact checking: Robots can check the facts in publications by checking them against information sources. This helps journalists avoid errors and unreliable information.

Benefits of Using Robots in Journalism

1. Increased efficiency: Robots can perform routine tasks faster and more accurately than humans, allowing journalists to focus on more creative and analytical tasks.

2. Reduced costs: Automation of processes reduces the cost of salaries for journalists and editors.

3. Improved content quality: Robots can analyze large amounts of data and identify important trends, which helps journalists create better and more relevant content.

4. 24/7 operation: Robots can work 24/7, allowing journalists to quickly respond to news at any time of the day.

**Ethical Aspects**

When using robots in journalism, it is necessary to take into account ethical aspects. Journalists must adhere to the principles of objectivity, accuracy and fairness, and respect the rights and interests of all participants in the information process.

In January 2016, the process of translating video news from English to Japanese on the BBC's Japanese-language service was carried out by a robot.

Dmitry Shishkin, editor of the BBC World Digital Development Service, expressed his opinion about the launch of the project with translators and robot announcers: "After analyzing the viewing data for automatic videos on the BBC Japan Service website, we were very surprised that these

indicators did not differ much from the indicators of advertisements made by journalists – it means that calls refers to frequency, viewing time and a number of other indicators. This shows that the Japanese public is already ready for such a product and that synthesized sounds are not particularly irritating to them. It will be very interesting to watch the performance of clips in Russian. We plan to launch a similar service in several more languages in the coming months – we have two main goals. The first is to provide the BBC's foreign-language audience with more video than newsrooms can produce manually, and the second is to appreciate the promise of new technologies and continue to look for new solutions that can help journalism in the future".

On April 18, 2016, the process of translating video news from English to Russian was carried out by a robot for the first time in the Russian-language department of the BBC.

In 2018, China's state-run news agency Xinhua showcased the development of Sogou, a virtual TV host. And recently it became known that the news agency Reuters and IT company Synthesia developed a prototype of a virtual robot using artificial intelligence (AI). For now, it only deals with sports news, but in the future it will be able to broadcast different types of programs. An artificial intelligence announcer named i-Sanj has also appeared in Kazakhstan. It is assumed that later such a television product will lead to the creation of "on-demand" news: instead of providing the most information, the robot announcer will be able to report on any event of interest to a specific user within a certain period of time. important news "for everyone".

The developers are sure that "...synthetic media will significantly speed up creative processes and reduce the gap between the creation of an idea and its implementation. They will also enable new ways of communicating and significantly impact storytelling, enable new interfaces, and ultimately change our perception of where the digital world begins and ends". At least Synthesia thinks so.

A fundamental new stage in the development of journalism is associated with the development of artificial intelligence technologies (artificial intelligence, AI) and machine learning (machine learning, ML) by mass communication theorists and practitioners. In recent years, the topic of automation of journalistic activity processes for information collection, processing, analysis, creation and dissemination has taken a leading position in the work of the world scientific community dedicated to the study of media development prospects (https://www.bbc.com/news)

On Sunday (March 3, 2019), China's state news agency Xinhua used a robotic news feed for the first time in the world. Xinhua News Agency used a robot to provide the public with short video information about the representatives attending the annual parliamentary session in Beijing.

Wearing short hair, a pink blouse and earrings, an artificial intelligence robot named "Xin Xiaomen" replaced a human announcer in Xinhua's one-minute video presentation for the first time in world news history.

"Xin Xiaomen" is modeled as a prototype of a real person and specially designed by Sogou Inc. developed by the technology firm Xinhua. At last year's World Internet Conference in the eastern Chinese city of Wuzhen, Xinhua already showed the public two robot announcers dressed as men, but the robot, named "Xin Xiaomen", was put on the air for the first time.

According to the editors of The Big The One: The rapid development of artificial intelligence has long caused public concern for many different reasons, the most important of which is considered to be the gradual displacement of people from a number of economic activities. So now, after China has introduced its new wonder, "where is the world going!" loud voices on the topic will certainly start everywhere. However, in this particular case, we strongly do not share these views and consider the opinion of "Xinhua" to be completely correct.

All viewers have long known that a TV announcer does not need a very perfect brain: he reads texts pre-written by people far more erudite than himself. Even the microprocessor in a very inexpensive modern lawnmower can handle this function, although the announcers are paid a lot of money, the robot is more economical and better.

Moreover, this Chinese plastic girl is far more beautiful than the physiognomies that have flashed on television for decades and whose mere appearance has caused the public to reject the

messages these characters voice. The robot looks better. At the same time, the robot does not need to apply makeup (How Generative AI is transforming Media and Journalism).

Finally, it is no secret that there is a rather tense emotional situation in the "creative teams" of the news, and in the competition for the position of the main announcer, hysterics, hair-pulling, scratching faces with manicured nails, etc. occur in some television studios. This does not happen with robots, and there is no scandal.

Therefore, we think that the appearance of robots on TV channels is very good, and now the whole world should learn from Xinhua News Agency.

TV presenters will be replaced by a virtual robot with artificial intelligence. The technologies of the future were presented by Russian and Chinese developers – the news release was conducted by a robot. Yelizaveta Zelenskaya, an employee of the TASS news agency, was the prototype of the virtual double (robot). The robot knows the Russian language perfectly, repeats speech and facial expressions. He can also convey emotions: he remains serious when necessary, and happy if the subject allows. In fact, he performs all the duties of a real TV presenter, but unlike him, he never makes mistakes and never gets tired.

The robot says: – Hello everyone, I'm Louise, a virtual TV host. I was developed in cooperation with the Chinese company Sogou. You just need to enter the text and I will broadcast the text exactly like a real TV presenter. However, I will never need a rest. The robot impressed many experts. However, some have pointed out that a robot will not be able to replace a real TV host. Especially in newsrooms where the news is broadcast live and with real inputs from the scene.

The profession of a news anchor requires a journalist to have good diction and the ability to read the text with the correct intonation. These skills are now being taught to the digital avatar. The only barrier that separates robots from mass television is the "uncanny valley" effect. Humanoid avatars cause anxiety in people because, although they look very similar to humans, their actions and behavior are still different from humans. Although, thanks to empathy, the TV presenter is able to attract and keep the attention of the audience.

Humans will continue to control the performance of artificial intelligence. In late May, Microsoft fired about 60 people from MSN's editorial staff, replacing them with an artificial intelligence program for news processing. However, the quality of story selection has not improved: the bot seems to be selecting material for the section based on click ability rather than importance.

The fact is that the ideas about humans and robots are very different. The machine reacts to the dimensions, but as an editor, it cannot determine what is interesting for the society, what agenda the publication should raise. It is still the person who has to control the process, select the news, and edit what the system writes.

No matter how powerful AI is, authorship and responsibility will rest with humans. The editor will have to set ethical limits. The person will also set ethical limits for the system, including training to prevent shocking content. The editor must ensure that the AI does not publish unethical messages that may be biased by the AI while studying the training texts. This will help avoid embarrassing situations – like Microsoft's Thai bot, which interacts with people on Twitter and then tweets a day later that it "hates feminists and wants them to burn in hell".

Journalist Barbara Ehrenreich worries that, according to many experts, 90 % of news will be generated by computers in 10 years. It is not surprising that experienced journalists are worried, because, for example, in 2015, robot-journalist "Syllabs" prepared 150 thousand texts about the results of regional elections in France within 4 hours. This is an unattainable task for a person.

However, this does not mean that journalists will lose their jobs en masse. The profession is probably just changing. So, researchers from Oxford compiled a list of professions that could be replaced by robots. Journalists rose to 285th place out of 366 professions, with an 11 % risk of losing their jobs due to AI. After all, teaching a robot to collect data isn't that difficult, but structuring and presenting data the way a human does is quite another.

Developed by OpenAI in San Francisco on November 30, 2022, Chat GPT is a prototype AI chatbot that can understand human language and produce human-like text in detail, and it was

released for free public testing (ChatGPT for Teaching, Learning and Research: Prospects and Challenges, 2023).

ChatGPT is a chatbot that can dialogue, find bugs in code, write poetry, write scripts and even argue. Among other things, a neural network can display underlying software code, generate financial analysis, summaries of technical articles or scientific concepts, make predictions, provide personalized advice, and provide ethical answers to any question.

ChatGPT became the most talked about AI project in late 2022 early 2023. Multi-functional and accessible to a wide range of users, this chatbot is now seriously changing the approach to many aspects of people's lives.

In 2022, AIJWF (Artificial Intelligence Journalism World Forum) – the 2nd Forum of the International Federation of Journalists on Artificial Intelligence was held in Dubai. AIJWF is the first global annual event that brings together scientists, media professionals and educational institutions to forecast 4IR and 5IR technologies.

 It is the world's leading platform that designs the future of media and touches people's lives until 2050. AIJWF aims to explore the era of artificial intelligence journalism, media metaverse, 7G journalism. It provides real-world experiences for international media on the use of artificial intelligence technologies in editing and recording, data analysis, fake news detection, 3D printing, big data analysis, data journalism and other media-related 4IR technologies.

Elon Musk, Steve Wozniak and more than 1,000 other AI and IT experts have called for a six-month moratorium on training artificial intelligence systems that outperform the company's recently introduced OpenAI GPT-4 model. In an open letter, they warned of potential risks to society. "Extensive studies have shown that such artificial intelligence systems that compete with humans can pose a serious threat to all of humanity", the letter says. According to one expert, because artificial intelligence systems can cause serious damage, relevant work should be delayed until humanity begins to better understand the consequences. Especially given that the big players keep secret information about what they're working on – so it will be difficult for the community to defend itself if the fears are justified ('A Threat to All Humanity': Musk, Wozniak, and Over 1,000 Experts Call for Stopping the Training of Neural Networks That Surpass GPT-4, 2023).

Elon Musk has announced that he is founding X.AI, a company that will be a direct competitor to OpenAI, the developer of ChatGPT, which is now owned by Microsoft. The most interesting thing is that with the help of X.AI, Musk intends to create a chat bot called TruthGPT, which will only search for the truth (Musk Is Preparing ChatGPT Competitor to 'Save the World').

Representatives of the journalist profession fear that artificial intelligence will put them out of work. However, if journalists put aside their fears and embrace AI, it could be a true savior for their craft – allowing them to more fully describe the increasingly complex, globalized, and information-rich world we live in.

**Conclusion**

Smart computers can not only analyze large amounts of data to facilitate operational research, but also verify the credibility of sources and facts from the audience. Generative AI is reshaping traditional media and journalism in profound ways, offering both opportunities and challenges. While AI enhances content creation, personalization, and efficiency, it also raises important ethical and quality concerns. Balancing the benefits of AI with the need for accurate, unbiased, and ethical journalism will be crucial as media organizations navigate this evolving landscape. By embracing the potential of generative AI while upholding journalistic standards, the industry can harness the power of technology to enrich and democratize the flow of information (How Generative AI is transforming Media and Journalism, 2024).

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