IRSTI 19.01.11

S.Sh. Takhan
V.V. Gavrish

L.N. Gumilyov Eurasian National University, Astana, Kazakhstan
Corresponding author: takhan_serik@mail.ru

Methods of tackling unreliable information

Abstract. *This article examines the processes of fake news creation and dissemination and, in particular, the technology used to combat disinformation. The material presents fake news from the point of view of the modern model of information consumption in connection with other phenomena, such as the "information bubble" and the "infodemie". The aim of the article is to identify the main tools to combat fake news and describe these processes using the example of different countries, national and fact-checking organizations. The article presents the methods of fact-checking based on the use of computer technologies, especially through open databases and neural network technologies. Separately, the relevance of developing a new content policy for the media, which includes direct and indirect proposals, is considered. Indirect proposals shed light on the technological side of the fight against fake news, while direct proposals deal with the professional competence of journalists and public relations specialists in the age of infodemics. The theoretical basis of the study was data from open sources, the results of foreign sociological studies, scientific articles by Kazakh authors, and materials from world and local media.*
Keywords: *fake news, infodemic, fact-checking, text analysis, content verification*

Introduction

"Fake News" is a phenomenon of intentional misinformation by the media that can affect any area of human life and society. Propaganda and tabloid journalism are considered as the precursors of this phenomenon, but in the modern version, Fake News appeared after the 2016 US presidential election [1]. At that time, the facts of manipulation of public opinion with the help of social networks were revealed, and terms such as "information bubble" were also updated. Careful consideration of this phenomenon allows us to establish a new problem in mass communication characterized by effective social destructiveness. The most striking example is the mass hysteria about the installation of fifth-generation (5G) cell towers and the anti-vaccination campaign. It should be emphasized that well-conceived disinformation can lead to a loss of credibility not only in medicine or science in general, but also in government and public institutions, signaling an increase in social tensions.

The spread of misinformation is facilitated by the lack of facts in the information space. From a practical point of view, this is exactly what justifies the interruption of communication and the restriction of communication channels during emergencies at the state level. In the book by American researchers Newsom, Turk, and Krakeberg, "This is PR", the observations of John Walter are reproduced, who identifies a number of reasons for the successful spread of forgery [2]. These include: the lack of comprehensive official information; the discrepancy between the official and alternative views; the reinforcement of doubts about the alternative opinion of the target audience; the closedness of official sources of information to any citizen; the delay in decision-

making by those in authority, exacerbated by problems in the mechanism of organizational activity. These conditions expand the list of consequences of "fake news" action not only for public trust. According to the results of the seminar "Fighting Fake News", organized by Yale Law School in cooperation with the Floyd Abrams Institute for Freedom of Expression, the main danger of disinformation is the devaluation and delegitimization of the concept of objective data, which undermines the ability of society to engage in rational discourse [3]. Another conclusion of the seminar was the assertion that the intention of the author of disinformation is less important than the fact of dissemination itself, as the latter leads to the discrediting of sources. Related problems include: the increasing fragmentation and politicization of promoting "safe news" rather than analyzing challenging issues, and the need for authoritative (and therefore resource-intensive) sources to refute unreliable information.

Moreover, the popularity of misinformation is a natural side effect of the current consumer model of information products. The need for "quick and short" content poses a challenge for journalists, PR, and researchers in fact-checking high quality facts. Fact-checking must meet the criterion of quick response, as the subject matter of the battle is characterized by "virality." For example, the method of training neural networks and algorithms, which is becoming increasingly popular, makes it possible to achieve greater efficiency through the automated elimination of disinformation [4]. Among these disruptive technologies is the possibility of bias in detecting false data by modifying Fake News. A potential solution to this problem lies in the area of content verification based on blockchain technologies and frameworks that enable artificial intelligence to continuously learn and effectively verify information.

Research methodology

In terms of methods to combat misinformation, coordination between civil society, technology companies, and fact-checking organizations is critical. This type of coordination activity requires that the PR specialist work primarily on strategic communication. The importance of strategy stems from the observation that disinformation campaigns usually aim at long-term image loss through negative messaging. Therefore, to effectively combat counterfeiting, a PR specialist needs a broad approach through strategic communication with digital media and public relations.

Before the mass spread of Fake News, debunking was the responsibility of media editors supported by independent experts. However, technological advances and the widespread disseminationofmisinformationhavenecessitated the handling of large amounts of data. Automated systems for analyzing information material differ in their operating principles, but are based on common fundamental methods. These include stylistic analysis, dissemination analysis, and user analysis.

Stylistic analysis of the text consists in the study of the logic of mentioning certain words, conjunctions, pronouns, negations or affirmations, as well as in a summary work to determine the general stylistic characteristics of texts of any complexity. This method allows you to identify the techniques of counterfeiters and isolate the idea whose implementation is the goal of disinformation.

The method of spread analysis is the transfer of the successful experience of American doctors in assessing the spread of COVID based on the study of water samples from urban sewers, which allowed them to quickly estimate and determine the number of infected people in different areas, to the study of media texts by modeling a similar situation for the spread of fake news.

User activity is used in the method to evaluate the activity of content consumers in the process of false information emergence. In this method, the target audience is divided into "normal users" who have no special intentions and "perpetrators" who derive certain benefits from harmful activities.

These methods are used symbiotically to operate fact-checking services. For example, the semantic analysis of SocialTruth, FakeBox, Giant Language Model Test and others. Using machine learning, these services determine the writing style of misinformation texts and automatically relate them to existing data. Researchers can use such technologies to detect fake news authors' accounts and quickly assess their credibility.

Such services work with semantic analysis techniques and deep learning algorithms. Fact checking involves a full examination of syntactic structures without considering the specifics of context, while preserving relationships. A similar analysis mechanism is also used in sentiment detection to determine topics and intentions and to flag spam messages.

ВЕСТНИК Евразийского национального университета имени Л.Н. Гумилева. Серия Журналистика
BULLETIN of L.N. Gumilyov Eurasian National University. Journalism Series

№ 1(142) 2023   93

Discussion

Reporting on the work of fact checking services should include an understanding of deep algorithms. Deep neural networks are machine learning through many layers. Several architectures of such networks are used to counter false information: hierarchical attention networks, recurrent neural networks, and convolutional neural networks [5].

Hierarchical attention networks, or otherwise HAN, work by representing sentences as a single document depending on the level of informativeness of all components of the text. The principle of "from smallest to largest" embodies the definition of this neural network as working with a structure. Recurrent neural networks (RNNs), which are best suited for evaluating eventfulness due to their dynamic nature perform the processing of large streams of new semantic and lexical information. CNN (Convolutional Neural Network) - Convolutional Neural Networks (CNN) are the basic tool for fact checking as they require minimal parameters and prior information for training. The accuracy of CNN results is usually over 90%. Using the symbiosis of CNN and RNN, or "long short-term memory," researchers can identify the logical connection between elements of the text from beginning to end.

Less commonly used than deep neural networks are traditional neural networks. Their use is limited to computational functions because they cannot remember previous information and cannot adequately classify text.

The next effective technique for fact checking is the Naive Bayes model. This simple probability classifier is useful for creating classifiers for invalid information. This method is sometimes complemented by logistic regression. This analytical technique is indispensable for natural language processing where comparative classifiers are trained.

Other methods include random forest, k-nearest neighbors, and support vector methods. "Random Forest" stands for "growing" decision "trees" from which the best result is selected. The nearest neighbor method is similar to the Support Vector Machine, a learning algorithm based on similarity. The Bayesian model, logistic regression, and deep neural networks together provide the most accurate result in detecting false information.

Open databases that collect and process fake information increase the reliability of classifiers, regardless of the type of machine learning.

For example, collections and lists of fake news sites published on Buzzfeed, Kaggle Kaidmml, and LIAR platforms facilitate fact-checking by providing a database of verified quotes from various spokespersons.

However, in addition to fact-checking methods in the fight against infodemics, it is necessary to take preventive measures. Participants in the Fighting Fake News seminar made direct and indirect suggestions for regulating the spread of fake news [3]. Indirect suggestions were related to the technical side of receiving disinformation, that is, the introduction of additional options and functions in the Internet environment. For example, the development and implementation of a technical design to stimulate critical thinking. The introduction of labeling of controversial material was proposed, and a ban on bots in the dissemination of news content using CAPTCHA technology was considered. It is worth noting that these methods have been criticized due to the unmanageable processes for new digital projects and the risk of covert censorship. The last factor of censorship is the most undesirable for platforms, because a false positive of the system is enough to be accused.

The direct proposals concerned the creation of a special accreditation system for content creators and/or distributors. The benefits of accreditation included recognition of best standards and practices that would be selected by professional organizations and experts. However, according to the interviewees, formalized codes may eventually play the role of a censorship tool, so the regulatory function should be used only in exceptional cases. The researchers at the seminar emphasized that truthfulness is an important prerequisite for the audience's trust in the media. One example was consistency between the title and content of articles, reporting of facts and their independence, and open admission of inaccuracies in materials. It was argued that fact-checking can have the counterintuitive effect of reinforcing disinformation, as falsifications are often repeated. Therefore, fact-checking can be expected to be of little value because people rarely change their educated opinions even when they are proven wrong. For this reason, respondents suggested that content creators should develop refuting information products without internal repetitions of the original falsification.

An important complement to the development of methods to counter the spread of misinformation can be the orientation of the professional activities

of media specialists. For example, the practice of collective fact-checking, in which a journalist speaks not on his or her own behalf but on behalf of a specific team that has checked the material for consistency with reality, which builds greater trust among readers. The pursuit of objectivity and neutrality seems to be a fundamental moment in the reporting of certain events, because the first is the "disagreement with the wrong", and the second is the "non-acceptance of one of the parties". This results in the need for a stricter personnel policy in editorial offices, because unscrupulous writers who are dedicated to propaganda or pursue certain interests should be rejected at the stage of content development.

The listed tools and methods are actively used in worldwide practice through the platforms of specialized fact-checking organizations. In the USA, the fact-checking function is performed by news outlets and publications, as well as by specialized organizations FactCheck, PolitiFact, and FullFact [6].

Taking the European Union as an example, we can highlight the creation of the document "Action plan for a coordinated response to disinformation" [7] in 2018. The document regulated the actions of EU members in the fight against fake news, taking into account all bureaucratic procedures and their implementation in the practical work of the media, civil society and fact-checking organizations.

Communication strategies are being developed within NATO to combat new hybrid threats [8]. For example, the analytical information space-monitoring program "Setting the Record Straight" is widely used to respond in a timely manner to the spread of misinformation and develop refuting content.

Kazakhstan's fact-checking organizations are represented by the Factcheck.kz and StopFake.kz projects. The first project was launched in 2017 by the International Center for Journalism MediaNet with support from the Soros Foundation in Kazakhstan [9]. The activity of Factcheck.kz is carried out according to the international standards of IFCN - International Factchecking Network, while StopFake.kz is an initiative of a group of Kazakh journalists with the support of the Ministry of Information and Social Development of the Republic of Kazakhstan. [10] StopFake.kz emphasizes commitment to the official data of relevant organizations in verifying misinformation and aims to refute the most viral and "everyday" fakes, while Factcheck.kz materials are often devoted to analyzing common misconceptions and stereotypes.

Conclusion

In the context of combating misinformation, a preventive approach to changing the behavior of content consumers should be highlighted separately. Thus, the ability to understand the authenticity of a given content is the most important sign of the importance of introducing critical thinking at the preschool, school, and higher education levels. Society, as the global target audience for news, needs to understand and be able to challenge the causes and processes of Fake News.

As a sustainable preventive measure, it is worth emphasizing the pedagogical-cultural approach. It is of strategic importance due to its long-term nature and effectiveness, as it enables analytical skills to be taught as early as school and critical thinking to be further cultivated at colleges and universities.

In addition to methods aimed at solving practical problems, the role of coordinated humanitarian research in the fight against disinformation should be emphasized. It is the task of specialists from the fields of sociology, psychology, pedagogy, and communication to study the problem of human bias when there is a stable demand for news that confirms the desires and beliefs of people who provide for the popularity of fake news.

References

1. Solon O., Facebook's failure: did fake news and polarized politics get Trump elections? [Electronic resource]. - 2016. - URL: https://www.theguardian.com/technology/2016/nov/10/facebook-fake-news-election-conspiracy-theories (Accessed: 11.05.2022).

2. Newsom D., Turk J., Kruckeberg D., This is PR: the realities of public relations (Wadsworth Publishing, 2006, P. 237).

3. Floyd Abrams Institute for Freedom of Expression, Fighting Fake News Workshop [electronic resource]. - 2017. - URL: https://law.yale.edu/isp/initiatives/floyd-abrams-institute-freedom-expression/practitioner-scholar-conferences-first-amendment-topics/fighting-fake-news-workshop (Accessed: 7.11. 2022).

4. Leopold A., Harrison K., How blockchain can protect you from counterfeiting [electronic resource]. - 2021. - URL: https://big-i.ru/innovatsii/tekhnologii/881580/ (Accessed: 7.11.2022).

5. Cazalens S., Lamarre P., Leblay J., Manolescu I., Tannier X. A content management perspective on fact-checking. - Proc. Companion Web Conf. 2018 - P. 565-574.

ВЕСТНИК Евразийского национального университета имени Л.Н. Гумилева. Серия Журналистика
BULLETIN of L.N. Gumilyov Eurasian National University. Journalism Series

№ 1(142) 2023   95

6. Protecting ourselves from fake news: fact-checkers and their limitations [Electronic resource]. - 2021. - URL: https://www.cits.ucsb.edu/fake-news/protecting-ourselves-fact (Accessed: 9. 11. 2022).

7. Report on the implementation of the action plan against disinformation[Electronic resource]. - 2019. - URL: https://www.exteriores.gob.es/en/PoliticaExterior/Documents/joint_report_on_disinformatiın.pdf (Accessed: 9. 11. 2022).

8. The fight against disinformation [Electronic resource]. - 2020. - URL: https://www.exteriores.gob.es/en/PoliticaExterior/Paginas/LaLuchaContraLaDesinformacion.aspx (Accessed: 11.10. 2022).

9. Mysaeva K. N. Fact-checking effects in Kazakhstan, Priorities of the mass media and the values of the profession of a journalist: materials of the International Scientific and Practical Conference (Yekaterinburg, May 17-18, 2018). Ural (College Press, Yekaterinburg, 2018, p. 233-235). [in Russian]

10. Koshmaganbetov S., Danilov A. Refutation of falsification - a vaccine against negativity [Electronic resource]. - 2020. - URL: https://www.inform.kz/ru/aleksandr-danilov-oproverzhenie-feykov-vakcina-ot-negativa_a3717860 (Accessed: 11.12. 2022).

С.Ш. Тахан, В.В. Гавриш

Л.Н. Гумилев атындағы Еуразия ұлттық университеті, Астана, Қазақстан

Тексерілмеген ақпаратпен күресу әдістері

Аңдатпа. Бұл мақалада фейк жаңалықтардың қалыптасуы мен таралу процестері, жалған ақпаратқа қарсы тұру технологиялары қаралады. Материал «ақпараттық көпіршік» және «инфодемия» сияқты басқа құбылыстармен бірге ақпаратты тұтынудың заманауи моделі тұрғысынан фейк жаңалықтарды ұсынады. Мақаланың міндеті – фейк ақпаратқа қарсы күрестің маңызды құралдарын анықтау, сондай-ақ әр түрлі елдердің, ұлттық және фактчекингті құйымдарды мысалғакелтіреотырып, осы процестерді сипаттау. Мақалада компьютерлік технологияларды, атапайтқанда, ашық мәліметтер базасы мен нейрондық желі технологиялары арқылы қолдануға негізделген фактчекинг әдістерінің процестері келтірілген. Бұқаралық ақпарат құралдары үшін тікелей және жана маұсыныстарды қамтитын жаңа контенттік саясатты әзірлеудің өзектілігі жеке қарастырылады. Жана маұсыныстар жалған жаңалықтармен күресудің технологиялық жағын көрсетеді, ал тікелей ұсыныстар инфодемия заманындағы журналистер мен қоғаммен байланыс мамандарының кәсіби құзыреттілігі мәселелеріне қатысты. Зерттеудің теориялық негізіне ашық дереккөздерден алынған мәліметтер, шетелдік әлеуметтік зерттеулердің нәтижелері, қазақстандық авторлардың ғылыми мақалалары, сондай-ақ әлемдік және жергілікті БАҚ материалдары алынды.

Түйін сөздер: фейк ньюс, инфодемия, фактчекинг, мәтіндіталдау, контентті верификациялау.

С.Ш. Тахан, В.В.Гавриш

Евразийский национальный университет имени Л.Н.Гумилева, Астана, Казахстан

Методы борьбы с недостоверной информацией

Аннотация. Данная статья рассматривает процессы формирования и распространения фейк-ньюс, в частности технологии противостояния дезинформации. Материал представляет фейк-ньюс с точки зрения современной модели потребления информации в совокупности с другими явлениями, такими как «информационный пузырь» и «инфодемия». Задачей статьи являются выявление наиболее значимых инструментов по противодействию фейковой информации, а также описание данных процессов на примере разных стран, национальных и фактчекинговых организаций. В статье приводятся процессы фактчекинговых методик, которые базируются на применении компьютерных технологий, в частности, через открытые базы данных и технологии нейросетей. Отдельно рассматривается актуальность разработки новой контентной политики для средств массовой информации, которая включает в себя прямые и косвенные предложения. Косвенные предложения освещают технологическую сторону борьбы с ложными новостями, в то время как прямые предложения касаются проблем профессиональной компетенции журналистов и специалистов по связи с общественностью в эпоху инфодемии. Теоретическим фундаментом исследования послужили данные из открытых источников, результаты зарубежных социологических исследований, научные статьи казахстанских авторов и материалы мировых и локальных СМИ.

Ключевые слова: фейк ньюс, инфодемия, фактчекинг, анализ текста, верификация контента.

Information about authors:

Tahan S.Sh. - Doctor of Philology, Professor of the Department of Teleradio and Public Relations, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan.

Gavrish V.V. - 1st year Master's student of the Faculty of Journalism and Political Science, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan.

Тахан С. Ш. – ф.ғ.д., телерадио және қоғаммен байланыс кафедрасының профессоры, Л.Н. Гумилев атындағы Еуразия ұлттық университеті, Астана, Қазақстан.

Гавриш В.В. - Журналистика және политология факультетінің 1-ші курс магистранты, Л.Н. Гумилев атындағы Еуразия ұлттық университеті, Астана, Қазақстан.