## TECHNOLOGIES FOR DETECTING FAKE NEWS ON SOCIAL MEDIA: EFFECTIVENESS AND CHALLENGES

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**Abstract**: *In recent years, along with the popularity of social networks, the amount of fake news (fake information) spread through them has also increased. This article analyzes the effectiveness of technologies for detecting fake news spread on social networks and the problems they face.*

**Key words:** *Fake news, freedom of information principle, deep-fakes, cybercrime, cybersecurity organizations, media literacy, social media, communication.*

**Абстрактный.** *В последние годы, наряду с ростом популярности социальных сетей, увеличилось и количество распространяемых в них фейковых новостей (заведомо ложной информации). В данной статье анализируется эффективность технологий обнаружения фейковых новостей в социальных сетях и возникающие при этом проблемы.*

**Ключевые слова:** *Фейковые новости, принцип свободы информации, глубокие фейки, киберпреступность, организации кибербезопасности, медиаграмотность, социальные сети, коммуникация.*

### *Introduction*

*Digital communications and social networks have become one of the primary sources of information in the 21st century. At the same time, the speed and scale of dissemination of false or misleading information — referred to as fake news — through these platforms has also increased. Fake news can lead to poor decision-making in society, social tension, and a crisis of trust. Therefore, technologies for detecting such information are becoming increasingly important.*

*Freedom of expression is one of the fundamental human rights. The ability to express one's opinion and speak freely is essential for social progress. Without freedom of speech, it is impossible to achieve other rights. However, certain situations fall outside the scope of free expression — specifically, when false or fabricated information is used to insult or defame others. Today, there are strict rules to ensure that mass media are fair, impartial, prompt, and accurate. For example, the Constitution limits the right to freedom of speech in the following cases: obscenity, bullying, defamation (false accusations), child pornography, perjury, blackmail, incitement to unlawful actions, true threats, and incitement to commit crimes.*

*In the era of social networks, users face the urgent issue of distinguishing truthful information from falsehoods. The problem is not only about ambiguous facts but also about deliberately fabricated stories aimed at manipulating public opinion — that is, fake news. The sections below will provide guidance on how to identify fake news.*

### Technologies for Detecting Fake News:

Artificial Intelligence (AI) and Machine Learning (ML): Algorithms have been developed to identify false information through semantic and stylistic analysis of texts. With the help of Natural Language Processing (NLP), emotional content, factual consistency, and authorship style can be analyzed.

Deep learning and neural networks: Convolutional and recurrent neural networks trained on large datasets help determine the authenticity of information. These systems are also used to analyze visual content (photos and videos).

Visual content detection technologies: Deepfake videos and images altered through Photoshop can be identified through metadata, pixel-level analysis, and contextual indicators.

Integration with fact-checking platforms: Platforms such as Facebook, Twitter, and Instagram collaborate with external sources to automatically flag and mark fake news.

### How Do Fakes Affect Society and to What Extent?

Fake news affects both domestic and international politics. It can intensify conflicts between nations, mislead voters and decision-makers, and disrupt the daily lives and mental well-being of ordinary people.

Here are two examples to illustrate the impact: 1st Case. Shooting in Washington: In 2016, a 28-year-old man believed a fake story claiming Hillary Clinton was involved in a child exploitation ring. He entered the Comet Ping Pong pizzeria with a firearm, suspecting the owner of being part of the ring and opened fire. Fortunately, no one was seriously harmed.

2nd Case. Nuclear Threat Tweet: In December 2016, Pakistani Defense Minister Khawaja Asif posted on Twitter claiming that "Israel has threatened Islamabad with nuclear weapons," and warned Tel Aviv not to forget Pakistan is also a nuclear power. The minister had based his statement on a fake news article published by AWD News. Israel had to go to great lengths to prove the story was false. A single fake report nearly caused a political crisis between nations.

As we can see, fake news can influence powerful individuals, voters, healthcare professionals, and other key decision-makers. This can result in serious consequences. Today, governments around the world are increasingly recognizing the risks posed by fake news and are adopting national-level strategies to combat it.

Many modern wars, religious and ethnic tensions, and internal political conflicts are often triggered or exacerbated by the spread of false information. The main purpose of spreading fake news is to attract attention, mislead users, and erode public trust in existing governments. While the threat may seem minor, its consequences can be significant.

According to July 2020 data, 3.96 billion people — about 51% of the world's population — used social networks. In Uzbekistan, this number reached 3.2 million by January 2020. In early 2018, the Ministry for Development of Information Technologies and Communications reported over 20 million Internet users in Uzbekistan. The daily active audience of social networks such as Facebook, Instagram, and Telegram was 1.6 million users.

**Is Every Incorrect Report Considered Fake?** No, not every inaccurate piece of information qualifies as fake. The origin of the information and the intent behind its dissemination play a crucial role. What distinguishes fakes from journalistic mistakes is that fakes are deliberately fabricated and spread to achieve specific goals. Therefore, global practice emphasizes that liability for disseminating false information applies only when it can be proven that the information was knowingly and intentionally fabricated and spread.

For example, if a social media user shares a piece of information believing it to be true, it is not considered an offense. However, if the individual knowingly creates or helps distribute

false information, it may be considered a legal violation. Ultimately, the determination of whether a report is fake or merely inaccurate is made not by officials but by a court of law.

**What Measures Are Being Taken in Uzbekistan? Why Is This Issue Important?**

As in many countries, social networks in Uzbekistan have become a powerful tool in shaping public opinion. Unfortunately, the methods and tools used to influence this space are not always legal or appropriate.

As discussed earlier, fakes are often used deliberately to mislead and manipulate the public, making it difficult to predict their long-term consequences. For instance, in the Uzbek segment of social media, fake claims such as "wild garlic cures coronavirus" have been used to generate profit. Others have falsely reported the death or arrest of officials to provoke public anxiety and manipulate opinion.

**Effectiveness of the Technologies Mentioned Above:**

 • AI-based systems can detect fake news with 80–90% accuracy in English;

• Real-time monitoring systems (e.g., CrowdTangle) track viral content on social media;

• Multilingual support allows these systems to combat fake information at an international scale.

**Challenges and Limitations:**

• Lack of context: AI systems may make errors when unable to fully understand the context of the input;

 • Language and cultural specificity: Fake detection systems are not yet fully developed for Uzbek and other low-resource languages;

• Evasion strategies: Fake information may be disguised as jokes or personal opinions to mislead detection systems;

• Legal and ethical concerns: Incorrectly labeling content may infringe on free speech or violate user privacy.

**Conclusion**

In conclusion, fake news is one of the most pressing information threats that have emerged in the modern digital era. It has become a major factor in undermining the credibility of social networks, which have turned into an integral part of human life. Today, every user is not only a consumer of information but also an agent for its distribution, making it easier for false or inaccurate information to reach the masses. The most dangerous aspect is that in many cases users are unable—or at times unwilling—to determine whether the information is true or false. This significantly exacerbates the negative impact of fake news on collective consciousness and social stability.

Furthermore, technological solutions alone are not a panacea in the fight against misinformation. The root of the problem lies in human factors—particularly in users' level of media literacy, critical thinking, and responsibility toward information. Therefore, in addition to technological tools, a comprehensive information and cultural policy must be implemented.

Combating fake news requires a multifaceted and complex approach. While technologies can serve as supportive tools in this struggle, an informed and literate society is the foundation and key to success. Preserving the truth in the digital age has become more important than ever, and it is a shared social responsibility for all of us.

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