On the Ethical Dilemma and Countermeasures of Algorithmic Recommended News

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Abstract. In the era of big data, algorithm technology is widely used in the field of news dissemination, which has promoted the reform and development of journalism. However, algorithm recommendation, as the main form of news distribution, is also facing controversy in the development process. On the one hand, algorithm recommendation news provides audiences with interesting information and achieves a high degree of matching between information and user needs; on the other hand, algorithm recommendation The proliferation of news has led to ethical issues such as privacy violations, information cocoon rooms, and lack of values. Based on the analysis of the ethical dilemma of algorithm recommendation news, this paper proposes to strengthen management from the aspects of legislation, technology and audiences to promote the healthy development of algorithm recommendation news.

Keywords: algorithm recommendation news · ethical dilemma · privacy

1 Introduction

In recent years, with the rapid development of artificial intelligence technology, news media has also entered the era of "smart media". As the core of artificial intelligence, algorithms are widely used in news production and distribution by major media, and have had a significant impact on the field of news dissemination. In the field of news production, algorithms can help journalists find valuable clues and complete news reports, and provide matching news information to audiences in the field of news distribution. The influence of algorithms in the field of distribution has received more attention. In 2012, Toutiao used algorithm technology to establish a news recommendation system at the beginning of its establishment in 2012, emphasizing "only as a porter of news"; afterwards, Sohu News, Sina News, NetEase News and other clients have launched personalized recommendation functions. Algorithmic recommendation news is an innovative application of information technology in the field of communication. It is a huge change in news distribution. It mines users' media consumption interests, habits and characteristics based on user portraits, user social relationships, related content, geographic location and other information consumption behaviors. And predict the user's future media consumption content, and then recommend "tailor-made" news products for users to achieve accurate push and effective supply, and to the greatest extent meet the user's personalized information needs [1] (Fig. 1).

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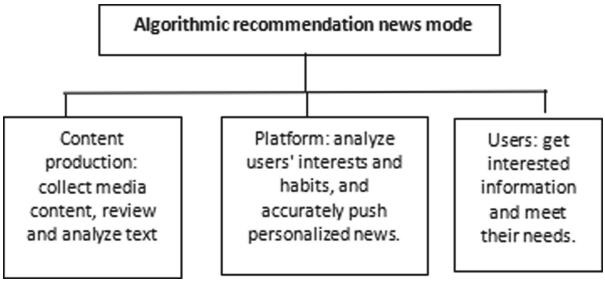

Fig. 1. Algorithmic recommendation news mode

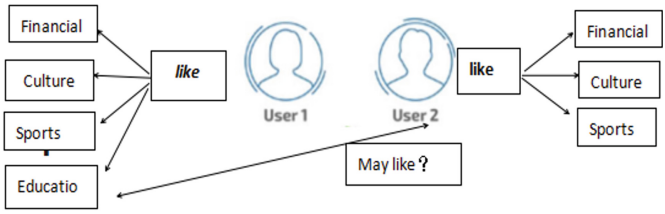

Fig. 2. Collaborative filtering recommendation

Algorithms based on big data have the characteristics of massive data, high efficiency of calculation and scientific decision-making, which is also an important reason for the application of algorithms in the field of news dissemination. There are three main methods for algorithmic news recommendation:

1) Content-based recommendation. According to the user's click record, analyze the user's preference, give the user a portrait on this basis, and then accurately push the news that the user may like.
2) Collaborative filtering recommendation. Find similar groups based on users' attitudes and interests, and then push the news that the group likes to users (Fig. 2).
3) Popular recommendation. Calculate hot news based on the number of clicks, and recommend hot news to users.

2 The Impact of Algorithm Recommendation Technology

2.1 Meet the Needs of Users and Realize the Audience-Centered

The news dissemination activities of traditional media are centered on the spreader, the audience passively receives information, and the active selection of the content and time of the news is small, and the individual needs of the audience cannot be met. In the new media era, audiences have become passive to active, and can independently choose media and information. Algorithmic recommended news based on the audience's clicks, reposts, comments, favorites and other media behavior infers the audience's interest

and value tendency, and then accurately provides the audience with personalized news. Algorithmic recommendation news has changed the traditional information distribution model. It selects appropriate information from a large amount of information and accurately pushes it, which meets the needs of users and achieves audience-centricity.

2.2 Improved the Efficiency of Information Distribution and Enhanced the Effect of Dissemination

In the era of mobile Internet, with the rapid development of news clients and self-media, massive amounts of content have been produced. How to extract the information that users need from the massive amount of information and realize effective distribution has become an important factor that affects the effect of dissemination. Algorithm recommendation technology can quickly find the information that the audience needs according to the user's interest, and push it to the audience's personal interface. This information distribution method improves the efficiency of information distribution and enhances the communication effect.

2.3 The Traditional Gatekeeping Mode Has Been Changed and the Gatekeeping Efficiency Has Been Improved

In traditional media news dissemination activities represented by newspapers, radio and television, editors are responsible for reviewing the content of news and acting as "gatekeepers". In the algorithm recommendation news, the algorithm check has changed the traditional check mode, replaced part of the editor check work, and improved the check efficiency. Take "Today's Toutiao" as an example. "Today's Toutiao" does not produce news. It only selects information suitable for the audience from a large amount of information to push news. In this process, news writers, algorithms, and review teams are responsible for reviewing the content, and algorithm checks play a central role. The workflow of algorithm check is to first remove the content that does not conform to the platform rules, then filter out the risky news, submit the controversial content for a second review, and finally recommend personalized news based on the audience's preferences.

3 The Ethical Dilemma of Algorithm Recommendation News

Algorithm recommendation technology provides audiences with interesting information, achieves a high match between information and user needs, and enhances user stickiness; but on the other hand, algorithms bring ethical issues such as reduced content quality, narrowed information, and infringed privacy It has also attracted widespread attention.

3.1 Decrease of Content Quality and Lack of Values

Algorithmic gatekeeping can improve gatekeeping efficiency, but it will change gatekeeping standards. The main indicator of algorithm recommendation technology is traffic. Content with high click volume is more likely to be pushed to users. Under this background, false information, headline party news, and vulgar content that cater to the

audience's interest are easily spread in large numbers. Will further increase the number of clicks, thereby reducing the quality of the content. In June 2017, the "People's Daily" published three comments in a row, criticizing the algorithmic news distribution model for the massive dissemination of vulgar content.

Unlike traditional media "gatekeepers" that strictly control values and standards, algorithm recommendations cannot think like humans, and cannot judge whether the values and public opinion orientation of recommended content is correct. Under the algorithmic gatekeeping model, the dissemination of content that does not conform to mainstream values will affect the social atmosphere and is not conducive to the construction of socialist spiritual civilization. In 2018, "Today's Toutiao" and "Kaishou" broadcasted programs that violated social ethics and caused widespread concern in the society. Although the platform quickly deleted related illegal videos and stopped related recommendations, "Today's Toutiao" and "Kaishou" The main persons in charge of the two websites were still seriously interviewed by the State Administration of Radio and Television. Although technology is neutral, the negative impact of technology without values cannot be ignored.

3.2 Information Cocoon Room and Self-reinforcement

The American scholar Sunstein put forward the concept of "information cocoon house" in the book "Information Utopia-How Everyone Produces Knowledge", which means that in the process of information dissemination, the public only pays attention to the information they choose and likes for a long time. Trapped in the "cocoon room" of information. Algorithmic recommendation technology pushes news based on the audience's media behaviors and interests, and too much emphasis on the user's preferences and habits will result in the user's contact with similar and homogeneous information, making it difficult to access really useful information and different opinions. Over time, In the end, he isolates himself from the diverse real world and falls into the "information cocoon". As the "People's Daily" commented, "Technology tailors information for users, opening a window that suits readers' tastes, but closing doors of diversification" [2].

The American political commentator Lipman put forward the concept of mimic environment in the book "Public Opinion". He believes that there is a "mimic environment" created by the media between the "objective environment" and the "subjective environment." The environment in which symbolic events or information is selected and processed, and restructured to show people. This mimicry environment will affect people's attitudes and behaviors. Under the algorithmic recommendation technology, the audience accepts the opinions and attitudes that they agree with, and they are not exposed to other different information and opinions. This will make the audience continue to reinforce themselves and fail to form a correct understanding of the real world.

3.3 Increased Risk of Leakage of User Information and Privacy

While algorithm technology brings convenience to human society, it also has an impact on the protection of user information and privacy. Algorithm recommendation is based on the massive information and data of news resources and users, and media platforms tend to touch the edge of the law in the process of collecting and using data. First of

all, users need to sign a user agreement before using various media platforms to provide personal information such as name, age, interest, and email address. This information becomes the database recommended by the algorithm. From the process point of view, the platform collects user data with the user's consent, but the user has no choice and cannot refuse the media platform's user agreement. Second, platforms such as APP, websites, or social media have over-collected and used user information. In 2020, Douyin APP user Mr. Ling sued the Douyin APP for recommending "people whom he may know" without his authorization. Mr. Ling believed that the Douyin APP illegally read and stored his address book and infringed his personal Information rights and privacy rights. Article 41 of my country's "Cyber Security Law" stipulates: "Network operators shall follow the principles of lawfulness, fairness, and necessity in collecting and using personal information." The Beijing Internet Court held that the defendant collected and used personal information without the user's consent. And store the user's personal information such as mobile phone number, social relationship, geographic location, etc., which infringes the user's personal information rights and interests.

4 The Development Strategy of Algorithm Recommendation News

4.1 Speed Up Legislation and Regulate Algorithm Recommendation Technology

Any technology is a double-edged sword. Nowadays, algorithm recommendation, as the mainstream form of news distribution, facilitates users to obtain information, but the opacity of the algorithm recommendation process also brings new challenges. Due to the complexity of algorithm technology, users can only see the results of the algorithm recommendation, and know nothing about the process of the "algorithm black box" operation. Such algorithm recommendation will bring a series of legal issues, such as how to reasonably obtain and use data ? If fake news is recommended, do I need to be responsible? How to solve the problem of algorithm technology infringement? This requires strengthening the supervision of algorithm technology, formulating relevant laws and regulations to regulate the algorithm, and preventing the "black box operation" of algorithm recommendation technology. The EU's "Data Privacy Act" stipulates that obtaining and using user data requires individual consent, and a strict penalty mechanism is adopted to regulate the use of personal data. Singapore and Japan in Asia have also formulated relevant laws and regulations to regulate the acquisition and use of data. Use. On June 17, 2019, my country's New Generation Artificial Intelligence Governance Professional Committee issued the "New Generation Artificial Intelligence Governance Principles-Development of Responsible Artificial Intelligence", clarifying that the formulation of laws and regulations to strengthen privacy protection should be accelerated, and the development of artificial intelligence must be adequate Protect the individual's right to know and choose, and respect and protect individual privacy.

At present, the privacy protection laws in the field of artificial intelligence in my country are relatively lagging. Relevant laws and regulations should be formulated as soon as possible to protect users' privacy rights, strictly stipulate how to collect, save and use personal information in algorithm recommendation technology, and prohibit the theft and leakage of personal information. At the same time, the privacy protection legal system needs to take into account the rights and interests of citizens and the development

of the industry, and must not harm the interests of enterprises. The rapid development of artificial intelligence and algorithm recommendation technology in my country has benefited from the relatively loose network environment. Therefore, the formulation and implementation of the privacy protection law should not become a stumbling block restricting the development of artificial intelligence. "The legislation and regulation of emerging things should take into account social fairness and individual rights so as not to stifle innovation" [3].

4.2 Upgrade Algorithm Technology, Strengthen Value Guidance

The natural flaw of algorithm technology is that it emphasizes traffic too much and lacks value attributes. Algorithmic recommendation "feeding" push can meet the needs of users, but it is easy to reduce information quality and information dimensions. To solve this problem, efforts can be made from two aspects: First, the algorithm technology upgrades, and high-quality content is recommended. While the algorithm recommends content that users are interested in, it can also simultaneously push high-quality content. In May 2018, the New York Times launched "Your Weekly Edition", "using a hybrid method of editorial curation and algorithms, to push to each user a customized experimental news and current affairs briefing, with the purpose of providing users with the most important news of the week The personalized selection of news, analysis and functions of the company broadens readers' interest in reading and recommends the best works" [4], On August 27, 2021, the National Internet Information Office of my country stated in Article 11 of the "Internet Information Service Algorithm Recommendation Management Regulations (Draft for Comment)": "Article 11 algorithm recommendation service providers shall strengthen the algorithm recommendation service page Ecological management, establishing and improving the mechanism of manual intervention and user independent selection, and actively presenting information content in line with the mainstream value orientation in key links such as the first screen of the homepage, hot search, selection, list category, and pop-up window." Second, improve the gatekeeping system and strengthen the value guidance. Algorithm recommendation technology has no values. Whether the content recommended by the algorithm has good values depends on the gatekeeper. "Algorithm recommenders should carefully check the content of the information they recommend, and cannot one-sidedly pursue economic benefits at the cost of sacrificing orientation, nor can they leave all the check-off procedures to the machine" [5]. Therefore, a double gate system of "artificial + intelligence" is established to filter out poor-quality information. It is very necessary. From an operational level, actively present information content that conforms to the mainstream value orientation in key links such as the first screen of the homepage, hot search, selection, list category, and pop-up window, strengthen the review of important content such as "hotspots" and "headlines", provide the option of "close algorithmic recommendation news", "no longer push such content", and increase the function of reporting bad information. Help improve the value attribute and information quality of algorithm news. According to the "2018 China Comprehensive Information APP Content Green Rating Ranking", the top five media with built-in content green ratings are People's Daily, Xinhua News Agency, CCTV News, The Paper and Phoenix News, and their value orientation is correct. The content is active and healthy, and there is basically no

unhealthy content involved. The algorithm can simultaneously push these high-quality media content while recommending personalized news.

4.3 Improve Users' "Algorithmic Literacy" and Improve User Experience

At present, the application of algorithm technology is more and more extensive, but many people know little about this technology, the network security is weak, and the basic algorithm skills are lacking, which will increase the risk of information leakage. Improving users' "algorithmic literacy" can be done from two aspects: First, users actively learn algorithm knowledge, understand relevant laws and regulations, improve the awareness of personal information protection, and avoid leaking personal privacy and infringing on the privacy of others. Secondly, understand the algorithm recommendation technology and actively train the algorithm. Algorithms recommend news regularly, and personal reading preferences and habits directly affect algorithm recommendations. Therefore, users can actively tame the algorithm through their own positive feedback. For example, for high-quality content, users can give positive feedback by liking, collecting, reposting, commenting, etc., for inferior content, they can directly ignore it, and for fake news. Report to combat. In this way, the "domesticated" algorithm will push more high-quality content, filter out inferior content, and improve users' experience of algorithm-recommended news. In addition, strengthen personal self-discipline to avoid indulging in information. In the era of big data, users face massive amounts of information every day, and the purpose of algorithms recommending news is to increase the stickiness and duration of users. If users lack the ability to identify information, they will waste a lot of time on spam. If things go on like this, the user's personal work and life will be affected. Therefore, users need to improve their personal "algorithmic literacy", learn to judge the reliability of information through information sources, and avoid sinking into the vastness of algorithmic information.

5 Conclusion

Algorithm technology has profoundly affected the practice of news communication, and at the same time, it has also brought new challenges to the development of journalism. Based on the analysis of the pros and cons of algorithm recommendation news, this article summarizes the ethical dilemma of algorithm recommendation news, and proposes corresponding development countermeasures: speed up legislation, regulate algorithm recommendation technology; upgrade algorithm technology, strengthen value guidance; improve users' "algorithmic literacy", to improve user experience, etc. In addition, it is also necessary to give play to the role of industry associations and strengthen industry supervision. It is true that various problems will inevitably arise during the development of algorithmic news. We should always adhere to the mainstream value orientation, continuously improve the algorithmic recommendation service mechanism, and promote the healthy development of algorithmic news. "No matter how algorithmic news changes, it must be ensured that the core values of journalism such as humanistic sentiment and responsibility are not affected by technology. Change and die, to ensure that technological change is conducive to the sustainable development of society and mankind" [6].

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References

1. Wu Weihua., The rational problem of algorithm recommendation in public communication., Contemporary Communication, pp. 79–81, March 2017.
2. People's Daily Online. The Review Department of the People's Daily: The prevalence of arithmetic requires more "editor-in-chief",2016–12–13. http://opinion.people.com.cn/n1/2016/1223/c1003-28970666.html.
3. Ma Siyuan, Jiang Wenqi, The Other Stone of Recommendation Algorithm Regulation [J], News Front, 218(3): 106–108.
4. Chen Changfeng, Song Yuntian.," Media Strategy in the Age of Algorithms: Personalized News and Its Controversy", News and Writin,. pp.56, August 2019.
5. Zhang Taofu, People's Daily Online: Recommend a good algorithm "steeringwheel", April 11, 2019. http://theory.people.com.cn/n1/2019/0411/c40531-31023876.html.
6. Wu Feng., The theoretical origin, latest development and industry influence of "algorithm news" in developed countries [J], Friends of the Editor, 2018(5): 48–54.