

The challenge of personal attribute preferences in recommending diverse, reliable news sources

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ABSTRACT

The affordances of social media and the internet allow users to encounter and engage with diverse and novel news content. However, user preference and bias may limit the content consumed in these spaces. Using signals of reliability, which have been studied as they relate to content and information sharers in social media environments, a recommender system could be built to suggest news content to users. However, as stated, assessments of trustworthiness and reliability come with some user bias and an algorithm that uses these preferences could be extremely limiting. We propose the following solutions: (1) using trusted social connections to surface content; (2) using bots to broaden a user's information ecosystem.

KEYWORDS

news recommendations, Reliability, News sources, Social media

1 Introduction

Billions of people across the globe use social media sites. In 2016, 2.28 billion people were on social media and that number is expected to increase to 3.02 billion by 2021 [1]. Though there are many reasons for using social media, news consumption is common activity on the sites. In the U.S, 67 percent of adults report getting at least some of their news on social media sites [2]. Though these figures are already substantial, the numbers undoubtedly increase when news usage metrics from mobile apps, messaging platforms like WhatsApp, WeChat and GroupMe, and news websites are also considered.

Online news audiences have a vast amount of content constantly available at their fingertips. In order to manage this amount of

information and avoid information overload, audiences make decisions about which content and sources to trust, read, follow and share. However, research suggests that audiences may do this in a way that limits their access to a diverse range of sources and viewpoints [3], [4], as audiences are likely to actively engage with content that confirms their existing beliefs [5], [6], [7].

This is exacerbated when personalization algorithms are at work. Algorithms are designed to recommend content that users will like and engage with. If users are personally driven toward a small set of perspectives, "accurate" algorithms may drive them deeper into that space. Beyond just the issue of viewpoint, user preferences - and biases - with respect to the people sharing content also matters. On many social media platforms, algorithms highlight news and other content posted by user accounts, not just organizational accounts. Thus, we must consider how users will respond to the people sharing the content as well.

2 Related work

Research suggests then when social media users encounter information sharers on the platform who are unfamiliar to them, they use multiple heuristic cues to gauge the trustworthiness and credibility of the source, as well as the message. Earlier work by [8] found that tweet content with non-standard grammar and punctuation were viewed as having low credibility, whereas tweets that included links to high quality sources were seen as more credible.

Audiences also judge the information sharers themselves. Users that had a default image, cartoon or avatar as their profile photos were rated as having low credibility, whereas users with high follower counts who had a Twitter bio were seen as more credible [8]. The same study found that the sharer's @handle or screen name also influenced perceived credibility. Topically relevant screen names were seen as more credible than 'internet style names.'

Similar, more recent research we conducted suggests that users find certain features of social media profiles more reliable than others [9]. For example, the study ($N=261$) found that when exposed to

neutral news-oriented Twitter-like content from unknown information sharers, users with Western names, gender-neutral names and female avatars were perceived as most reliable. Respondents were also most likely to share content from information sharers with Western names, gender-neutral names and who had non-human avatars (e.g. logos, non-human objects).

3 Proposed solutions, recommendations

These signals of reliability could be integrated into a recommender system to suggest content to users. If we know they are likely to engage more with posts from people with certain profile features, an algorithm could be designed to bring more content from those types of accounts.

However, one can see that there is some bias in these evaluations of trustworthiness and credibility. There are plenty of reliable, trustworthy and talented journalists and who do not have Western sounding names and who use cartoon avatars in their profile photos - though subjects in our study gave these types of users among the lowest credibility ratings. There are also many nefarious sources with profiles that match the traditional standards of trustworthiness.

This raises the question of how to build a recommender system that (1) incorporates information about profile attribute credibility assessments, (2) suggests useful, reliable content that users will perceive as such and (3) does not reinforce unfair biases.

First, recent results from our work [9] and others [8] indicate a preference for news shared from accounts with certain personal attributes. These preferences may vary among users. Leveraging profile attribute preferences has the potential to improve perceived recommendation quality, but this requires empirical analysis in addition to experimental analysis.

If these preferences do improve recommendation accuracy, they will negatively impact the diversity of sources that are recommended and potentially the diversity of news itself. To counter this, we see research paths in countering these preferences and in playing to them. To counter such preferences, we may look to strong, trusted existing social connections and highlight engagements (e.g. likes, shares) from a user's friend who shares content from a less-preferred profile type. This may weaken the bias toward certain sources. When those biases may be difficult to overcome, we are interested in the impact of bots. Recommender systems or news organizations may consider creating automated accounts with profiles that play to a user's reliability bias, and have those accounts share news that will broaden the user's information ecosystem.

4 Conclusion

Recommender systems help people find reliable news in an ecosystem full of sources and perspectives. Previous results that show users have preferences for a range of personal attributes of news-sharing accounts, including avatar type, name, screen name, and gender. This raises several interesting research questions. Recommender systems may be able to improve their performance

by incorporating profile attribute preferences. This would need experimental validation. However, any improved performance may come at the cost of bias in the type of sources and in the diversity of news a person sees. Countering user bias through recommendation and leveraging the perceived reliability of a profile to bring more diverse news to users are both interesting research challenges going forward. They highlight the complexity of social interaction and the role it plays in recommendation, but also the opportunities that arise from a deeper understanding of how users assess people they encounter online.

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