Conflicting views on social media balanced by an algorithm

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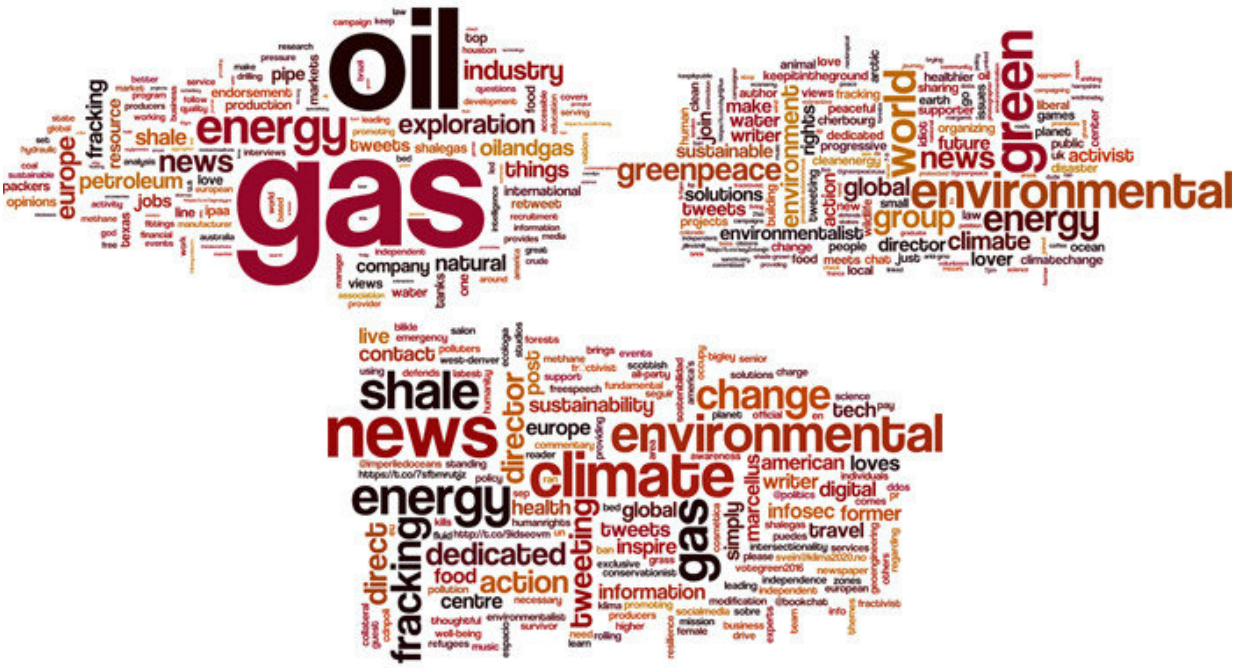

Fracking has two circles of users talking among themselves, strengthening their conflicting campaigns. The third word cloud represents the words used by the selected influential users. Credit: Kiran Garimella

Social media has become an important news source for a majority of adults. A common complaint is that social media help create echo chambers in which people reading information do not expose themselves to different viewpoints but are often confined to their own. This happens

especially with controversial and polarising topics where two viewpoints become so isolated and conflicting viewpoints can emerge that people do not receive or read information that will not reinforce their own opinion.

Researchers from Aalto University and University of Rome Tor Vergata have designed an algorithm that is able to balance the information exposure so that social media users can be exposed to information from both sides of the discussion.

The algorithm uses a greedy algorithm paradigm that aims to find optimal choices at each stage. In this study the algorithm works by efficiently selecting a set of influential users, who can be convinced to spread information about their side to the other side. The goal is to maximize the amount of users exposed to both viewpoints.

Escaping the echo chambers with the help of influential users

"We use word clouds as a qualitative case study to complement our quantitative results, whereby words in the cloud represent the words found in the users' profiles. For instance, if we look at the topics related to the hashtag #russiagate, we can see not only that the two word clouds that represent the conflicting viewpoints are rather different, but also that they indicate either support or hate for Trump", describes Aalto University researcher Kiran Garimella.

Similarly, a topic like fracking has two circles of users talking among themselves, strengthening their conflicting campaigns.

"We see in our data that the network is fragmented into two sides, one set of users supporting fracking and using terms such as 'oil', 'energy', and 'gas', and another set of users opposing fracking and using terms

such as 'environmental', 'green', and 'energy'. There is small overlap in the keywords used by each side, indicading that users are in an echo chamber", Professor Aristides Gionis adds.

The algorithm helps to identify a small number of influential users who are exposed to both campaigns and have a more balanced viewpoint.

"Examining the content of those users we see that it uses terms from both sides of the discussion. Thus, these users can play a significant role in initiating a social debate and help spreading the arguments of one side to the other," Garimella concludes.

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