

Detecting opinion polarisation on twitter by constructing pseudo-bimodal networks of mentions and retweets

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Abstract

© Springer International Publishing Switzerland 2016. We present a novel approach to analyze and visualize opinion polarisation on Twitter based on graph features of communication networks extracted from tweets. We show that opinion polarisation can be legibly observed on unimodal projections of artificially created bimodal networks, where the most popular users in retweet and mention networks are considered nodes of the second mode. For this purpose, we select a subset of top users based on their Page Rank values and assign them to be the second mode in our networks, thus called pseudo-bimodal. After projecting them onto the set of "bottom" users and vice versa, we get unimodal networks with more distinct clusters and visually coherent community separation. We developed our approach on a dataset gathered during the Russian protest meetings on 24th of December, 2011 and tested it on another dataset by Conover [13] used to analyze political polarisation, showing that our approach not only works well on our data but also improves the results from previous research on that phenomena.

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Keywords

Community detection, Opinion polarization, Twitter, Two-mode networks