World Academy of Science, Engineering and Technology
International Journal of Social and Business Sciences
Vol:11, No:07, 2017

Trend Detection Using Community Rank and Hawkes Process

Authors : Shashank Bhatnagar, W. Wilfred Godfrey

Abstract : We develop in this paper, an approach to find the trendy topic, which not only considers the user-topic interaction but also considers the community, in which user belongs. This method modifies the previous approach of user-topic interaction to user-community-topic interaction with better speed-up in the range of [1.1-3]. We assume that trend detection in a social network is dependent on two things. The one is, broadcast of messages in social network governed by self-exciting point process, namely called Hawkes process and the second is, Community Rank. The influencer node links to others in the community and decides the community rank based on its PageRank and the number of users links to that community. The community rank decides the influence of one community over the other. Hence, the Hawkes process with the kernel of user-community-topic decides the trendy topic disseminated into the social network.

Keywords : community detection, community rank, Hawkes process, influencer node, pagerank, trend detection
Conference Title : ICSNAM 2017 : International Conference on Social Network Analysis and Mining
Conference Location : Paris, France
Conference Dates : July 20-21, 2017