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Paper Review for April 8

Paper Review

<Summary>

The paper “Information Diffusion in Online Social Networks: A Survey” introduces problems in information dissemination like paths of information separation (medium), most popular information separation (content) and members for information separation (recipients). Therefore, the rest of the paper will analyze information diffusion based on the author's point of view.

To solve the problems in OSN (online social network), the author divides the paper into five categories. The first part briefly explains the advantages and disadvantages of existing OSN methods. Next, the paper proposes the basic concept and information diffusion attributes in online social networks. In the third and fourth section, the author presents how to predict topics that users are potentially interested in and build an information diffusion model based on those topics of interests. In the last part of the essay, the author introduces some methods in information diffusion (Guille, 2013). There is one part of the essay that I am particularly interested in. To correctly predict information separation content, the author uses two models: interpretation model and prediction model. The purpose of the interpretation model is to infer the potential expansion and give a complete activation sequence, so that the models are able to trace the path taken by a piece of information. For the prediction model, it aims to predict how a specific diffusion process will develop in a given network from a time or space perspective by learning from past diffusion content.

<Strengths and weaknesses>

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The paper successfully solves information diffusion problems by introducing a lot of different types of algorithms. For example, in the essay, the author suggests using Page Ranking algorithm to evaluate the distribution of influence in the entire network (Guille, 2013). In addition to that, to correctly rate the information influence, Romero developed a graph-based method IP (Impact-Passivity), which is similar to the well-known HITS algorithm (Guille, 2013). However, excessive information exposure also brings some privacy problems. Different from old social media (like newspapers or TV channels), the digital features in online social networks make the concealment of social relationships in real life visible, so that personal privacy information is likely to become a commodity that can be traded on social networks.

< Are the evaluations convincing?>

The essay provides a lot of different methods analyzing information diffusion in social networks. In the essay, it introduces five different information separation techniques (mentioned above) based on content, medium and recipients. Also, in the end of the essay, it brings many influential communicator algorithms like K-core, Twitter Rank and Page Rank algorithms. Therefore, I think the evaluation is convincing.

<Other applications>

As mentioned above, excessive information exposure on the one hand improves the convenience of people’s lives, but on the other hand it also brings a lot of ethical problems. For example, as social interaction reduces, community awareness is weakened, and the focus is no longer "who is sharing", but "what is being shared”. To solve that problem, companies should give users the right to turn off content recommendation and information collection functions, so that people could choose the content they like to read.

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1. Guille, A., Hacid, H., Favre, C., & Zighed, D. A. (2013). Information diffusion in online social networks: A Survey. ACM SIGMOD Record, 42(2), 17-28. doi:10.1145/2503792.2503797