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An Approach to Maximize the Influence Spread in the Social Networks

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Abstract : In this paper, we consider the influence maximization in social networks. Here we give importance to initial diffuser called the seeds. The goal is to find efficiently a subset of k elements in the social network that will begin and maximize the information diffusion process. A new approach which treats the social network before to determine the seeds, is proposed. This treatment eliminates the information feedback toward a considered element as seed by extracting an acyclic spanning social network. At first, we propose two algorithm versions called SCG − algoritm (v1 and v2) (Spanning Connected Graphalgorithm). This algorithm takes as input data a connected social network directed or no. And finally, a generalization of the SCG − algoritm is proposed. It is called SG − algoritm (Spanning Graph-algorithm) and takes as input data any graph. These two algorithms are effective and have each one a polynomial complexity. To show the pertinence of our approach, two seeds set are determined and those given by our approach give a better results. The performances of this approach are very perceptible through the simulation carried out by the R software and the igraph package.

Keywords : acyclic spanning graph, centrality measures, information feedback, influence maximization, social network
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