Modelling information warfare in social networks based on game theory and dynamic Bayesian networks

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In this article is examined the problem of modeling information influence and confrontation in social networks. The actuality of problem is proved by the growing influence of social networks on the social processes and increasing competition in the information space. We propose a solution approach based on Stackelberg game theory and dynamic Bayesian networks. A hierarchical algorithm for estimating information influence is also proposed. This algorithm can significantly speed up the computation in large networks. The applicability of the approach is tested in a computational experiment on synthetic data and data from Twitter. The proposed approach has great flexibility and performance and makes it possible to solve a wide range of tasks. It is promising to use it in the construction of information-analytical systems.

Keywords: *social networks, game theory, dynamic bayesian network, informational influence maximization.*

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