Modeling Information Diffusion Over Social Networks For Temporal Dynamic Prediction

ABSRACT

- How to model the process of information diffusion in social networks is a critical research task.
- Although numerous attempts have been made for this study, few of them can simulate and predict the temporal dynamics of the diffusion process.
- To address this problem, we propose a novel information diffusion model (GT model), which considers the users in network as intelligent agents.
- The agent jointly considers all his interacting neighbors and calculates the payoffs for his different choices to make strategic decision.
- We introduce the time factor into the user payoff, enabling the GT model to not only predict the behavior of a user but also to predict

EXISTING SYSTEM

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- We introduce the time factor into the user payoff, enabling the GT model to not only predict the behavior of a user but also to predict when he will perform the behavior. Both the global influence and social influence are explored in the timedependent payoff calculation, where a new social influence representation method is designed to fully capture the temporal dynamic properties of social influence between users.

DISADAVANTAGE

- The diffusion process unfolds in discrete time-steps t, and begins from a given initial active user se

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PROPOSED WORK

- We propose a novel information diffusion model (GT model),where,between different choices (behaviors), the user jointly considers all his interacting neighbors' choices to make strategic decisions that maximizes his payoff.

- We propose a time-dependent user payoff calculation method in the GT model by exploring both the global influence and social influence.

- We propose a new social influence representation method, which can accurately capture the temporal dynamic properties of social influence between users.

- We conduct experiments on Sina Weibo and Flickr datasets. The comparison results with closely related work indicate the superiority of the proposed GT model.

ADVANTAGES

- Which can accurately capture the temporal dynamic properties of social influence between users.
- The GT model to not only predict the behavior of a user but also to predict when he will perform the behavior
- Furthermore, we can also see that the GT model using diffusion cascades for global influence calculation achieves better prediction performance than that using pagerank
- These results illustrate that when our model is fed with more accurate parameters, it shows better performance in prediction task

SYSTEM REQUIREMENT

- **HARDWARE REQUIREMENT:**
- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 15 VGA Colour.
- Mouse : Sony.
- Ram : 512 Mb.

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- **SOFTWARE REQUIREMENT:**
- Operating system : Windows XP.
- Coding Language : ASP. Net with C#
- Data Base : SQL Server 2005.

CONCULSION

- We have presented a novel information diffusion model in this paper. It regards the users in a social network as intelligent agents, and jointly considers all the interacting users to make strategic prediction.

- By introducing the time dependent payoffs, the model has the capability to predict the temporal dynamics of information diffusion process.

- Both the global influence and social influence are explored for user payoff calculation, where the social influence representation method is newly designed for fully capturing its temporal dynamics.

- Experimental results have confirmed the rationality and effectiveness of the proposed model.