

Study and Analysis of Influential Node Tracking in Social Networks

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Abstract - Today social networks are becoming a good human resource for advertising companies who are broad casting their advertisements at low cost and reach huge people at a time. Information Node Tracking is like traditional approach Information maximization where advertiser seeks high populated users in the social network with high- speed internet. This work focused to study and analyze the information maximization problem using greedy approach.

Key Words: Influence maximization, Information Node Tracking, Social Networks, Greedy Approach

1.INTRODUCTION

Social networks [1], are becoming dynamic and vibrant platforms used by millions of user all over the world. It created the globalized market to the product sellers to reach the variety of customers. The advertisers have started their promotions on social media[2] to attract new customers around the globe. For that highly dense social networks to be identified to reach the customers within a minute of time. Hence lot of marketing strategies were developed in different perspectives like the regional market, offers etc., The basic requirement for detecting influence node tracking is social network user behavior tracking. In order to propagate a marketing information to users effectively and efficiently, the certain techniques can be used.

2. RELATED STUDIES

Q. Jiang et al [3] proposed a model using simulated annealing technique for detecting influence maximization in social network. M. G. Rodriguez et al [4], developed model for detecting Influence maximization in continuous time diffusion networks. Y. Tang et al [5], done analytical study Near-optimal time complexity meets practical efficiency for Influence maximization. Y. Tang et al [6], done martingale approach for Influence maximization in near-linear time.

3. PRELIMINARIES

3.1 Influence Maximization

A social network is a framework relationship which enables a person to communicate and propagate information one to another. This can be possible either

person to person or group communication. The spreading information indirectly influences another person. The influence function calculated as k to n where as k is known as influence maximization.

3.2 Greedy Algorithm

The greedy approach[8] uses heuristic knowledge by selecting local optimum with the goal of achieving global maximum. This approach finds the solution for sub problems with a local maximum as a solution. The final solution can be obtained by combining all sub - solutions into overall solution called optimal solution.

- 1.A candidate set, from which a solution is created// Subproblem
- 2.A selection function, which chooses the best candidate to be added to the solution// finding local maximum
- 3.A feasibility function, that is used to determine if a candidate can be used to contribute to a solution
- 4.An objective function, which assigns a value to a solution, or a partial solution, and//finding global maximum
- 5.A solution function, which will indicate when we have discovered a complete solution//optimal solution

4. PROPOSED WORK AND EXPERIMENTATION

The proposed work is developed as an application to detect influential node track in social network.For that the greedy technique used. The Basic working principle is finding a local maximum solution at each stage.



Fig - 1: Active Nodes In Different Group

In influence, node tracking occurs when the nodes are communicating themselves initially and all nodes in a network start communicated with other groups. Therefore each node influences another node which creates influential node network. The greedy approach will select

each node in a social network. It achieves candidate solution that means active nodes in a group are selected as a local maximum. For experimentation purpose, a sample data are used to find the influence maximization. The interaction between the members in a group is analysed and also predicts how one person influences another person during communication. similarly, the active nodes in different groups also identified. The above figure 1 shows the active nodes in different groups. The user node search allows finding a particular active node in different groups which shown in figure 2.



Fig – 2: Search User In Different Groups

The following figure 3 shows the username and group id with network information.

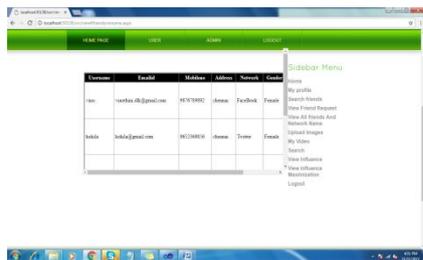


Fig – 3: Search User In Different Groups

The user in various groups are communicating each other and overall interactions are analyzed. The following figure 4 shows the response and request messages.



Fig – 4: Used Request and Response Message

The greedy technique is implemented in the sample data with transactions. The following figure shows the list of active nodes from different groups.

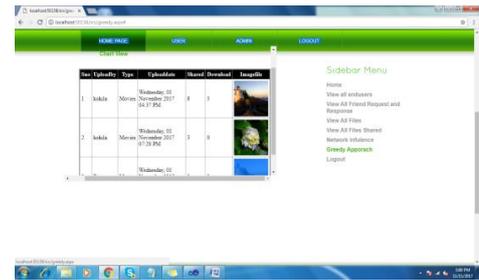


Fig – 5: Finding Active node using Greedy Approach

The greedy approach results in the influence maximization which results best active node in a network. The following figure 6 shows the influence maximization result.



Fig – 6 Influence Maximization

CONCLUSION

In this paper, the influence maximization problem in social network is analyzed using sample data taken from social network. The greedy method is applied for finding influence node tracking in a social network. This heuristic search technique allows to finding a best active node in a network (local maximum). Therefore the best active node is considered as most powerful node which influences another node in a network. When the active node is identified then the next step finding best communication network. Hence the active network is identified. The experimental results achieved better performances.

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