

# LoongSing Influence Analysis for Chinese Weibo User

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**Abstract**—Recently micro-blog (also called Weibo) has a dramatically explosive growth in user's count and apps once seen in social media community in China. Different user has different impact in the social media community such as famous movie stars even have ten millions fans. In this poster, we propose an influential model based on User-Weibo graph and assign influential rank for different users based on their influences. Also an influence app based on Sina Weibo is developed and demonstrated to evaluate the influences' rank by oneself.

**Keywords**- Social media, micro-blog, Weibo, Influence analysis, LoongSing

## I. INTRODUCTION

Chinese micro-blog (also called Weibo in pronunciation) [1-2] has a tremendous explosive increment in users' counts and apps once seen in social media community recently. Sina Weibo and Tencent Weibo are two of the most popular Weibo sites in China. The number of their registered users has exceeds two thousands millions. The user influence model also has been investigated by researchers such as TURank[3] and ObjectRank[4]. On contrary with Twitter, Chinese Weibo site also add more social network feature such as "comments". This feature makes the influence model for Twitter users are different to Weibo users. Based on the idea of PageRank algorithm [5-6], we consider each Weibo holds individual influence unit, combined with individual user's rank and we propose a User-Weibo model. User-Weibo model try to identify the influence source of a user with User-Weibo graph. Based on Sina Weibo, an influence app named LoongSing and android client app LiveTweet[7] is also developed and opened for computing their influences' rank.

## II. CHINESE WEIBO INFLUENCE ANALYSIS

### A. Influence model for Weibo user

Among the information cascades[8], the notable difference between twitter and Chinese Weibo is "comment". In Twitter, a user cannot comment his followers' tweets. While in Chinese Weibo, most sites such as Sina Weibo and Tencent Weibo, a user typically can comment his followers' tweets, make a more complex interaction in-between an information swarm (we guess this is the most charming to attract new user, if you can conceive a celebrity's comments to his or her fans).

**Definition 1** Chinese Weibo Influence: A user's Weibo influence is a value describe a user's potential to transmit news and reach a large of other users with intention.

**Definition 2** Quantification of Chinese Weibo Influence: A user's Weibo influence is a value resulted from user's rank score plus all the tweets' score from this user.

Here we give our rank model based on TURank[5], which can be described in User-Weibo Schema Graph[9] as shown in Figure 1. The nodes include all users and weibo (the messages posted by user, we call it weibo). The edges indicate users' behavior. The weight of each edge represents the influence of the behavior contribution to user or weibo. For example, user influence weibo directly through their own influence and its weight is defined as 0.8. The weibo can increase its influence by the retweets or comments of other users or weibo. To ensure the rationality and convergence, the sum of out edge weight of each node must be 1.

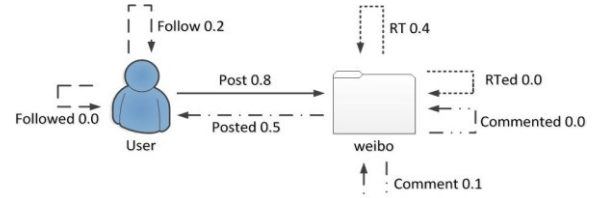


Figure 1. User-Weibo Schema Graph

The User-Weibo Graph is shown in Figure 2.

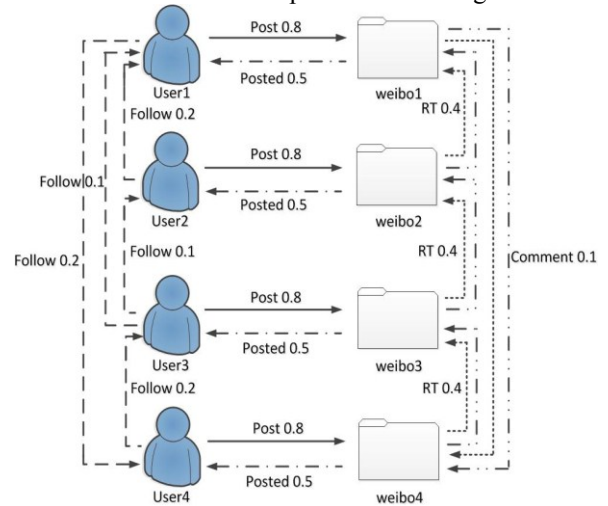


Figure 2. User-Weibo Graph

### B. LoongSing influence analysis for Weibo user

Based on Sina Weibo[10] and our former work[7], an influence app named LoongSing is also developed and opened for evaluating user influence' rank. Accompany with LoongSing an android app LiveTweet is also developed and opened for posting and reading Weibo freely.



Figure 3. LoongSing Weibo Influence analysis web site

Based on our influence model, we have setup and demonstrated with our LoongSing. LoongSing is a Sina Weibo app based on OAuth 2.0 protocol [11]. User can visit our web <http://weibo.tongshare.com>. When a user clicks on LoongSing Weibo influence test as shown in Figure 3, he/she will be redirected to Sina OAuth web. After a user logs in with his/her Sina Weibo username and password, his/her influence rank will be computed and returned immediately as shown in Figure 4.



Figure 4. User Weibo influence rank from LoongSing

All the user former influence rank is stored in LoongSing web site for other user's query. The query web is shown in Figure 5.



Figure 5. User's Weibo influence query web interface

### III. CONCLUSION

In this poster, we have proposed an influence model based on User-Weibo graph for Chinese Weibo. The notable difference from Twitter is that Chinese Weibo site also add more social network feature such as "comments". This feature makes the influence's computation more complex than Twitter. Our model combines the influential rank and Weibo rank computation together with a User-Weibo graph and evaluate the influence value of a user. And we also developed a Weibo app named LoongSing for Weibo influence analysis in real-time by oneself. And an android app for user to post and view Weibo is also developed and open for free use.

### ACKNOWLEDGMENT

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