



# Personalized Micro Blog Recommendation Using Sentimental Features

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**Abstract--**Recently, microblogs have emerged as a new open channel of communication for people on the Internet to read, commentate, socialize and so on. With the advent of a huge number of information in microblog spaces, including articles, profile, pictures and other multimedia resources, the “information overload” has become a critical problem for microblog users, which brings bloggers plethora of choices and options available that often varies in quality and may severely affected the recommendation quality. Accordingly, providing microblog users with articles that suit their particular preferences is an important issue. To solve this problem, this paper proposes a novel method integrating social network information and collaborative filtering. A user ranking model based on social network analysis is constructed to estimate the correlations between microblog users, and incorporated into similarity measure for improving the quality of microblog recommendation. Experiments on a real-world dataset are carried out to evaluate the performance of the presented method. The results show that the proposed method outperforms traditional KNN method and improves recommendation quality effectively.

**Keywords:-** Microblog Recommendation, Similarity Measurement, Social Network

## I. INTRODUCTION

It is a very challenging task to get users’ real sentiment from large collections of short user-generated social media contents (e.g. microblogs). It is also of great value and has a wide range of application prospects to mining users’ sentiment, such as customer relationship management, recommendation systems, and business intelligence [1–3]. The automatic sentiment analysis task usually requires the machine to have a deep understanding of natural language [4], which has achieved some satisfactory performances in long formal text sentiment analysis. However, its performance drops sharply when it is applied to microblog sentiment analysis as it assumes that texts are independent and identically distributed (i.i.d.). Compared with long formal texts, microblogs are much shorter and have various expression style, e.g., ‘lol’ and ‘It is so cooooooool!’, which exacerbates the problem of vocabulary sparsity.

On the other hand, social media provides different types of metadata, such as user relations, which can be leveraged to improve the accuracy of microblog sentiment analysis

## II. TYPES OF SOCIAL-MEDIA CONTENTS

1. *User Generated Content*: UGC, also known as User-Generated Content, is a brilliant way to increase engagement and reach. It can also be the source of a warm-welcoming feeling for new and existing followers. Through user-generated content, they’ll see that you care about your audience and engage with them by sharing their created content.
2. *Podcasts*: Podcasts have been around for a very long time, but recently they’ve gained momentum. Some say they are the new radio (since they are on-demand). Due to how popular they are, and the benefits of doing them, you should focus on marketing your podcast to get more listeners. Because some social sites, such as Facebook and Twitter, don’t allow direct audio uploads, you’ll have to either:
  - Share the link to the podcast
  - Create a static image, place the podcast audio over the top, and upload as a video.
3. *Livestreams* : Livestreaming on Facebook is a must. After you’ve finished your livestream, you can choose whether you want the content to be available to others afterwards. This allows other people to view the livestream if they had missed it. Believe it or not, you can actually use Facebook Live as a lead generating machine. Depending on the content you’re livestreaming, you could promote it within the stream. Just ask viewers to click on a specific link in the comment section and fill out a form to access an asset you’re displaying on-screen or talking about.

## III. LITERATURE REVIEW

Sentiment analysis has been studied as a part of Natural Language Processing at different level as Text Processing problem by Turney [5].



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Although there are lot of research which uses user-generate contents in recommendation engines, there are very little attempts to consider sentiment included in posts during the recommendation process.

Hybrid recommender systems are used to improve the results of collaborative filtering by incorporating a sentiment classifier in the movie recommendation system. Product reviews, which are represented by Bank and Franke [6], can be done on weblogs through different text mining techniques. Recommender systems are used to make recommendations about products, information, or services for users. Most existing recommender systems implicitly assume one particular type of user behavior. However, they seldom consider user-recommender interactive scenarios in real-world environments.

User recommendation approaches that overlook user sentiment have been proposed by Freyne and Chen [7] using different recommendations approach. There are different areas which contain user sentiments in social recommendersystem. Auser recommendation engine within a social web. Many sources can be combined to develop factors that may manage the similarity measure.

Signal based approach given by Arru et al [8] is used to find user similarity based on signal. With the development in electronics and Internet technologies, online information available has been constantly increasing. In such scenario, users are confused and more and more feel the need to be guided in the selection of the information to pay attention to.

News recommenders are a possible solution, since help users find the information of possible interest to them. In order to provide personalized suggestions, such systems rely on a representation of the target user's interests and preferences.

An approach given by Hu and Liu [9], are used to predicting the semantic orientation (SO) of sentiment words. In this approach small set of seed of known sentiment words are defined first and grow the set automatically by incrementing synonyms and acronyms. The algorithms given above categorize sentiments as either positive or negative. We differentiate two possible approaches to rating suggestion based on the related work. The first approach addresses rating interference as a classification problem.

Sinha and Swearingen [10] compare online recommender systems for movies and books with recommendations from friends and find the latter is preferable. Recent work deals with user reviews that have been already classified positive and negative information provided by the users themselves.

Lexicon based techniques have been used to assign sentiment values to words causing sentiments [11]. This simple technique is not sufficient for most real world scenarios because the proposed sentiment depends not only on single words but on the context and various other factors. There are various machine learning techniques which consider it. These techniques work well on entire reviews but not on sentences, that why it is not feasible to extract relevant topic related sentiment data.

**Table 1:**  
 Analysis of the available recent algorithms

Authors	Algorithm/Technique	Advantages	Disadvantages	Remark/ Further extension
P. D. Turney [5]	Natural Language Processing	user-generate contents in recommendation engines	Sometimes difficult to communicate to machines.	It makes possible to talk to the machines.
M. Bank and J. Franke [6]	Hybrid recommender systems	It improve the results of collaborative filtering by incorporating a sentiment classifier in the movie recommendation system	Do not work properly sometimes.	Most existing recommender systems implicitly assume one particular type of user behavior
J. Freyne, M. Jacovi [7]	User recommendation approaches	Many sources can be combined to develop factors that may manage the similarity measure.	Many sources can cause the conjunction issue sometimes.	There are different areas which contain user sentiments in social recommender system
G. Arru, D. FeltoniGurini [8]	Signal based approach	online information available has been constantly increasing	users are confused and more and more feel the need to be guided in the selection of the information to pay attention to	News recommenders are a possible solution
B. Liu, M. Hu [9]	semantic orientation	In this approach small set of seed of known sentiment words are defined	The algorithms given above categorize sentiments as either positive or negative.	We differentiate two possible approaches to rating suggestion based on the related work
C. Biancalana [10]	online recommender systems	Recent work deals with user reviews	classified positive and negative information provided by the users themselves.	Can use online
J. Chen, W. Geyer [11]	Lexicon based techniques	These techniques work well on entire reviews but not on sentences	This simple technique is not sufficient for most real world scenarios	There are various machine learning techniques which consider it



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In the comparison table 1 above, some existing recent algorithms are discussed, their advantages, disadvantages, limitation and further extension is discussed in the given table.

#### IV. CONCLUSION

This work suggests some interesting directions for future work. For example, it would be interesting to investigate the contributions of different sentiment relations to sentiment classification. Other information, like spatial-temporal patterns, could be potentially useful to measure the sentiment consistency of people as well. For example, people in Miami might be happier about the temperature than people in Chicago during winter time. We can further explore how sentiments diffuse in the social network and how people's sentiments correlate with internal (their friends) and external (public events) factors. With the analysis, it is possible for us to understand the differences of sentiment between the online world and physical world.

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