

Highly Defined & Improvised Recommendation System Using Social Media

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ABSTRACT

Many e-commerce websites support the mechanism of social login where users can sign on the websites using their social network identities such as their Facebook or Twitter accounts. Users can also post their newly purchased products on microblogs with links to the e-commerce product web pages. Social media advertising is a multi-billion dollar market and has become the major revenue source for Facebook and Twitter. To deliver ads to potentially interested users, these social network platforms learn a prediction model for each user based on their personal interests. To meet the real-time requirement, we first propose an online retrieval strategy that finds k most relevant ads matching the dynamic context when a read operation is triggered. To avoid frequent retrieval when the context varies little, we propose a safe region method to quickly determine whether the top-k ads of a user are changed. Finally, we propose a hybrid model to combine the merits of both methods by analyzing the dynamism of news feed to determine an appropriate retrieval strategy.

Keyword: - e-commerce product recommender, product demographic, microblogs, recurrent neural networks etc....

1. Introduction

1.1 Project

Social media advertising is a multi-billion dollar market and has become the major revenue source for Facebook and Twitter. To deliver ads to potentially interested users, these social network platforms learn a prediction model for each user based on their personal interests. However, as user interests often evolve slowly, the user may end up receiving repetitive ads. In this paper, we propose a context-aware advertising framework that takes into account the relatively static personal interests as well as the dynamic news feed from friends to drive growth in the ad click-through rate. To meet the real-time requirement, we first propose an online retrieval strategy that finds k most relevant ads matching the dynamic context when a read operation is triggered. To avoid frequent retrieval when the context varies little, we propose a safe region method to quickly determine whether the top-k ads of a user are changed.

1.2 Motivation of the Project

We propose a context-aware ad recommendation framework that takes into account the relatively static personal interests as well as the dynamic news feed from friends to drive growth in the ad click-through rate. We treat the news feed as a dynamic context that provides additional clue in the spatial, temporal and social dimensions for ad recommendation. For example, when a friend posts in Facebook the dining photos in a restaurant, relevant promotion coupons can be recommended. When a friend shows the status in hospital, displaying gift delivery ads is a good choice. However, it is a rather challenging task to support social ad recommendation in a highly dynamic context. First, the posting rate and login frequency in Facebook and Twitter are very high. A new post will appear in all the friends news feed and may cause their top-k relevant ads to be changed. Second, the ad repository is huge, e.g., Facebook has over 1 million advertisers³, making the top-k query processing rather expensive when the read frequency is very high.

2. Problem Statement

To deliver ads to potentially interested users, these social network platforms learn a prediction model for each user based on their personal interests. we propose a context-aware advertising framework that takes into account the relatively static personal interests as well as the dynamic news feed from friends to drive growth in the ad click-through rate. we propose a hybrid model to combine the merits of both methods by analyzing the dynamism of news feed to determine an appropriate retrieval strategy.

2.1 Literature Survey

However, it is a rather challenging task to support social ad recommendation in a highly dynamic context. First, the posting rate and login frequency in Facebook and Twitter are very high. A new post will appear in all the friends news feed and may cause their top-k relevant ads to be changed. Second, the ad repository is huge, e.g., Facebook has over 1 million advertisers, making the top-k query processing rather expensive when the read frequency is very high. To meet the real-time requirement, we first propose an online retrieval strategy that adopts existing top-k aggregation algorithms to find the most relevant ads matching the dynamic context when a read operation is triggered.

Top-K Aggregation Query. The other branch of existing work related to our problem is the top-k aggregation query [2], [3]. Consider a database D where each object $o = (x_1, x_2, \dots, x_n)$ has n scores, one for each of its n attributes. Given a monotonic aggregation function f , where $f(o)$ or $f(x_1, x_2, \dots, x_n)$ denote the overall score of object o , the top-k aggregation problem is to find a set of top-k objects in D with the highest overall scores. Many approaches such as Threshold Algorithm (TA), CA and their variants [3], [4], have been proposed. Since we consider in-memory recommendation without disk I/O, we adopt TA algorithm for top-k ad retrieval as it has been shown to be instance-optimal [3].

2.2 Goals and Objectives

- Propose a new context-aware ad recommendation by considering both long-term user interests and highly dynamic contents in the news feed.
- To avoid frequent retrieval when the context varies little.

3 Architectural Design

Since the model is relatively static, the top-k relevant ads for each user can be computed and returned together with the news feed when a read operation is triggered. However, when the dynamic context is taken into account in the ranking function, we are unable to pre-compute the ads for each user because each write operation will cause the news feed of all the friends to vary and the incurred pre computation cost is unavoidable. In this section, we introduce how to efficiently retrieve the top-k relevant ads on the fly.

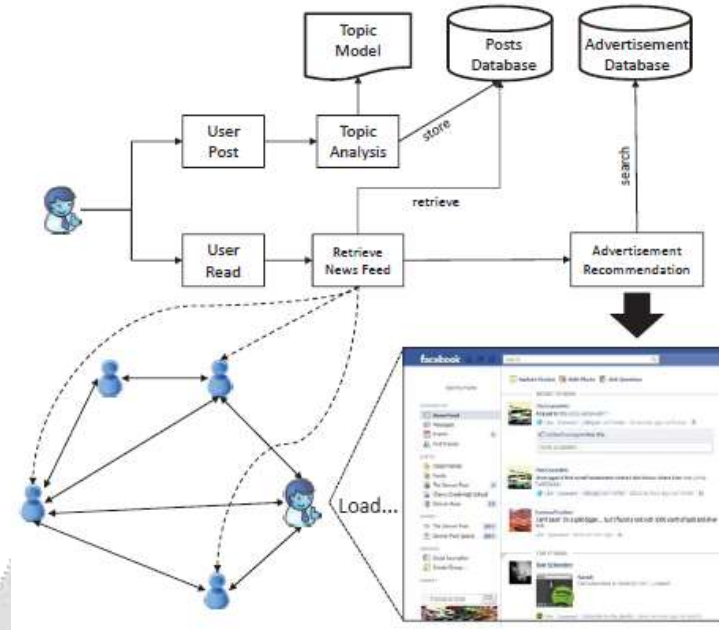


Fig -2 System Architecture

Social media ad spending has been rising dramatically in recent years and is expected to reach 24 billion in 2015. As the dominator in the market, Facebook made an ad revenue of 12.47 billion dollars in 2014, an increase of 58% year over- year². With the pay-per-click advertising methodology to assess the cost effectiveness, existing social network platforms place great emphasis on delivering matching ads to potentially interested users. However, it is a rather challenging task to support social ad recommendation in a highly dynamic context. First, the posting rate and login frequency in Facebook and Twitter are very high. A new post will appear in all the friends' news feed and may

cause their top-k relevant ads to be changed. Second, the ad repository is huge, e.g., Facebook has over 1 million advertisers, making the top-k query processing rather expensive when the read frequency is very high.

3.1 Purpose and Scope of Document

- We propose a new context-aware ad recommendation framework on social networks by considering both long-term user interests and highly dynamic contents in the news feed.
- We present an online retrieval strategy that obtains k most relevant ads when a read operation is triggered.
- We devise a safe region technique to avoid repetitive retrieval when the context varies little.
- We propose a hybrid model to seamlessly combine the merits of the two retrieval strategies.
- We conduct extensive experiments on real social networks with billions of edges and real ad datasets with millions of tuples. The experimental results show that our hybrid method significantly outperforms the other two retrieval strategies up to 30x speedups.

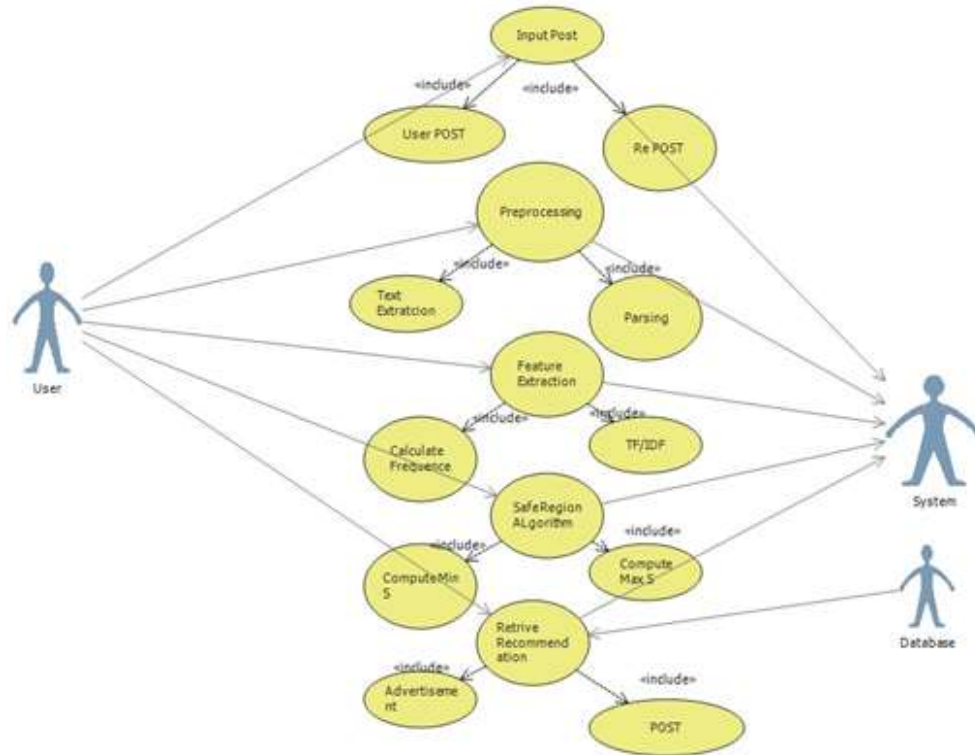


Fig -2 Use Case View

The written word is a wonderful vehicle for communication, but it isn't necessarily the best way to represent the requirements for computer software. Analysis modeling uses a combination of text and diagrammatic forms to depict requirements for data, function, and behavior in a way that is relatively easy to understand, and more important, straightforward to review for correctness, completeness and consistency. This section presents resources for conventional and object-oriented analysis (OOA) methods as well as resources for UML.

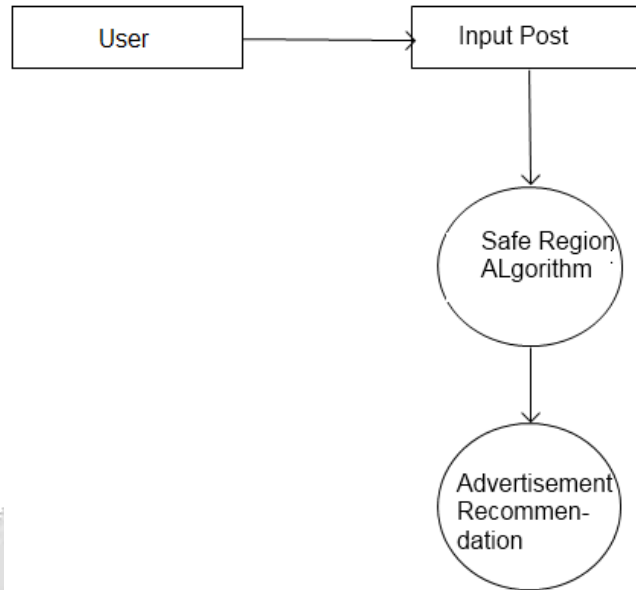
3.2 Data object and Relationships

Data objects and their major attributes and relationships among data objects are described using an architecture and various UML diagrams.

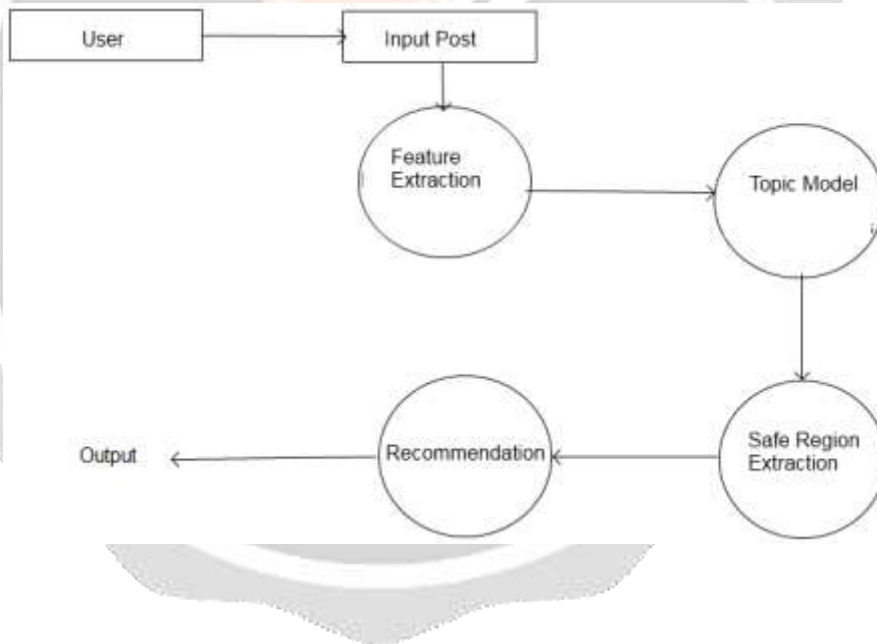
3.3 Functional Model and Description

- **Faster Speed:** When user gives input in the form of keywords. Using this system user will get the faster speed that means user will get the solution of the query in less time. Whenever we use the policy manager to get appropriate conditions of specific user the time requires for the query evaluation increases and using this system the time required for binding solution is reduced.
- **Accurate Output:** When user gives input in the form of query. Using existing system user does not get accurate output (can't control their properties) as per user's requirement but using this system user get the proper and accurate output as per users requirement.

Data Flow Diagram level-0



Data Flow Diagram level-1



4. CONCLUSIONS

Thus we will implement context-aware advertisement recommendation problem for high speed social news feeding. Our main idea is that on the e-commerce websites, users and products can be represented in the same latent feature space through feature learning with the recurrent neural networks. Using a set of linked users across both e-commerce websites and social networking sites. General ranking function of ads against each user in the social network by combing the his/her interests and dynamic contents in the news feed.

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