Real Time Technical Expert's Recommendation from Social Media

Saurabh Ghadage[1], Ankita Kshirsagar[2], Shivani Sapkal[3], Nikita Tilekar[4]

[1,2,3,4]BE Student, Department of Information Technology, Baramati, India

***Abstract*: Now a day's social network plays a synergistic role in solving user queries. A platform such as ask.fm solves user queries in real time but the computation time as well as waiting time is undetermined. We propose new platform to solve the challenging problems related to various social networking sites by effectively connecting user queries to social streams by recommending experts profile .We propose our User-Expert connection web interface through which user can ask query. User's query get analyzed by LDA algorithm to identify topic of the query.L2R algorithm is use to rank expert's profile and recommended to user. User can interact with expert in real time.**

***Keywords*: Expert recommendation, experts profile, social networks.**

1. Introduction

In order to overcome information overload, recommender system have become a key tool for providing users with personalized recommendation on items such as movies, music, books, news ,web pages and many more.

In a recent year, social network is most popular platform on the internet. Social networking is the use of internet-based social media program to make connection with friends, family, classmates, customers and client's social networking can occur for social purpose, business purposes or both through sites such as LinkedIn, Facebook, Twitter, etc. LinkedIn is a business employment oriented social media network service that operates via a websites and mobile apps. It is mainly used for professional networking. LinkedIn had 500millions members in 200 countries, out of which more than 106millions members are active. LinkedIn allows members (both worker and employee) to create profiles and "connections" to each other in an online social network which may represent real-world professional relationships. As LinkedIn is a professional network various Technical experts are active on it.

As our project is purely based on data mining, the overall goal of data mining process is to extract information from a dataset and transform it into an understandable structure for further use. So, we are extracting information of technical expert's from LinkedIn, concurrently we are processing user's query via our web interface. After extracting the real-time information and user's query, (LDA) Latent Dirichlet Allocation algorithm is applied on it. LDA is generative statistical models that finds the topic or detect the topic. Ranking is a model central part of many information retrieval

collaborative filtering, sentiment analysis and online advertising. Once we successfully detect topic from extracted information, (L2R) Learning to Rank model is used. L2R model rank the experts based on various attributes and recommended to the users on our web interface. Finally on web interface user get technical experts based on their domain and recommended in least time.

2. Literature survey

Recommendation system is very popularly used these days which has become a preferable choice for researchers. Hence then significant number of papers had been published. Recommender systems like hashtag recommendation, food recommendation, songs recommendation and question answer recommendation, etc. is splendid in real time.

Now a day's, expert's recommendation from social media like Facebook, Twitter, LinkedIn, etc. is very convenient for the users. An early work by Ms. Kamble et al. [1] focused on expert's answer recommendation. In that user asked question online and then they will get expert's answer of that question. In our system we are extracting information of technical experts from LinkedIn. When we extract the data from LinkedIn which will stored in database for further use. When user asked technical query in our system then that query detected by LDA (Latent Dirichlet Allocation) algorithm.

David et al. [2] has described LDA to a generative probabilistic model for collection of discrete data. But our system is real-time.

Loulwah et al. [3] proposed that the data is changes over time. So he provided Online Topic model (OLDA), a topic model that automatically captures thematic patterns and identifies emerging topics of text streams and their updates day by day which will be used in our framework for topic detection. Once we detected the topic, we have to rank an expert's profile.

Tie-Yan liu et al. [4] gives the brief introduction about L2R (Learning to Rank) model for the information retrieval (IR). He proposed that L2R for information retrieval is a task to automatically construct a ranking model using training data such that model can sort the new object according to their degree of relevance or importance. There are three approaches of L2R: point wise approach, list wise approach and pair wise approach. The list wise approach learns a ranking function by taking individual lists as instances and minimizing a loss

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305

Table 1
Paper's description with title and author

S. No.	Title	Author	Description
1.	Hash tagger+ :Efficient High-Coverage Social Tagging of Streaming News	Bichen shi, Gevorg Poghosyan, Georgiana Ifrim and Neil Hurley.	Propose a Hash tagger +, an efficient l2r framework for combining news and social streams in real time and provide hash tag recommendation to news.
2.	Review Paper on Answers Selection and Recommendation in Community Question Answer System	Ms. Kamble Rajani Ravaso, Mr. Chetan J. Awati and Ms .Sonam Kharade.	Propose Question answer expert recommendation system in which expert will provide answer of that question which is asked by the user.
3.	On-Line LDA: Adaptive Topic Models for Mining Text Streams with Applications to Topic Detection and Tracking	Loulwah AlSumait, Daniel Barbara, Carlotta Domeniconi	To present an topic modeling technique ,which automatically provide related topic *and identifies emerging topics of text Streams and their changes.*
4.	Learning to Rank for Information Retrieval	Tie-Yan Liu	Provide Learning to rank for Information Retrieval (IR) is a task to automatically construct a ranking model using training data.

function on the list [5]. Point wise approaches look at a single document at a time in loss function. Then take single document and train a classifier on it to predict how relevant it is for the query [4]. The pair wise approach looks at a pair of document at a time in a loss function. Similarly it takes a pair of documents and trains a classifier on it to predict how relevant it is for query [4].

So in our system we rank the technical expert's profile based on their Job experience, domain, designation which are relevant to the user's query.

3. Proposed system

The proposed framework consists of topic detection and ranking namely as shown in Fig. 1.
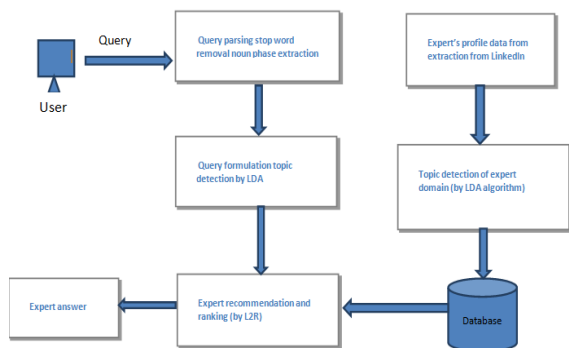

Fig. 1. System architecture (overall architecture of system)

In this System architecture User enter his technical query and system remove stop words from that specific query. Topic is detected LDA algorithm and then rank using L2R algorithm. System give Expert recommendation from social media and then this recommendation provide to user's query. Database consist details of Technical experts profile with some specific attributes such as Name , Email id , domain , Job experience , designation ,etc. Extracted profiles in database are detected using LDA algorithm. LDA algorithm is twice used in overall System. Along with algorithms database play major role in system for recommendation.

4. Conclusion

In this paper, we presented real time technical expert recommendation from social media. We designed a system

where user can their technical query .Advantage of our system is reliable, fast, efficient and real time. On internet we get pool of information but in this expert recommendation is provided. The system has ability to answer any user at any time. This system overcome the drawback of other internet system i.e. time consuming, etc.

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306

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