

2nd International Symposium on Big Data and Cloud Computing (ISBCC'15)

Intelligent travel recommendation system by mining attributes from community contributed photos

Subramaniaswamy V^a, Vijayakumar V^b, Logesh R^c and Indragandhi V^d

^{a,c}*School of Computing, SASTRA University, Thanjavur-613401, India*

^b*School of Computer Science and Engineering, VIT University, Chennai-600127, India*

^d*School of Electrical and Electronics Engineering, SASTRA University, Thanjavur-613401, India*

Abstract

This paper purposes a system which helps user in finding tourist locations that he/she might likes to visit a place from available user contributed photos of that place available on photo sharing websites. This paper describes methods used to mine demographic information and provide travel recommendation to users. This paper also describes an algorithm adaboost to classify data and Bayesian Learning model for predicting desired location to a user based on his/her preferences.

© 2015 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of scientific committee of 2nd International Symposium on Big Data and Cloud Computing (ISBCC'15)

Keywords: Personalized Travel Recommendation; geo-tagged photos; route planning; Adaboost; Naïve Bayesian Modeling

1. INTRODUCTION

Travel has become one of the hottest contenders of modern era. Users are interested to search for their favorite tourist destination places, so this domain has becoming a hot topic for researches to take up Research in Travel Recommendation System. In general, travel recommendation system consists of two aspects: generic recommendation and personalized recommendation. For the generic recommendation, it contains the suggested travel information for the destination given by user when he/she is planning a trip, which answers the question like "I want to go to Hyderabad, what are the attractions of this place?". The personalized recommendation consists of user's preferences such as user attributes such as male/female, group type (couple / family / friends) to create a user profile. It can provide a more appropriate recommendation result matching user's profile. Both aspects are to

support route planning before the journey.

2. RELATED WORK

With advent globalization people are interested in looking for their favorite Travel destination which leads to increase in Trip mining and recommendation. Generally, the data sources for learning to recommend can be classified into three categories GPS trajectory data, travelogues (blogs) and Geo tagged photos. GPS trajectory data obtained by GPS are mainly used at the early stage. Zheng et al. (2011a) utilize GPS trajectory data to extract the interesting location, classical travel sequences and provide personalized friend and location recommender using the similarity of user profiles created from their location histories. The main drawback of this method is that it is impossible to collect data from a large number of people, as every person has a GPS Enabled device it becomes impossible to collect and analyses data from each device.

Some Travel Recommendation System analyses Travelogues (blogs) to obtain trip related knowledge. It analyse keywords in blogs and rank landmarks for travelers. The main drawback of this is some keywords relating to some Landmark in a city can be missed or Travelogues are usually unstructured and contain much noise metadata. Recently, there is an increasing tendency to adopt the information from geo-tagged photos. D. J. Crandall et al.(2009) systematically adopt large-scale photo database to discover important landmarks. They evaluate on many cities and indicate that the time-stamped and geo-tagged photos will construct the typical pathways of people movements. The major differences between our work and other related studies are that we bring in concept people attributes such as gender, group type, travel season in the travel photos and consider demographic information with the movements of photographer into a personalized travel recommendation framework.

Trip mining along with recommendation systems have seen a rise of interest and research in the recent past. The systems are designed incorporating appropriate relevant information from sources such as GPS trajectory data, travelogues and Geo tagged photos, or a combination of these. Initially the process of recommendation estimations involved GPS trajectory data largely. In [Y. Zheng et al. 2002, 2011a, 2011b] locations of interest are determined using GPS trajectory data along with location histories of similar users. Suggestions of popular travel routes are also provided along with location recommendation. The scarcity of data and complexities in building adequate information is a challenge in trajectory based systems. In [R. Ji et al. 2009, Q. Hao et al. 2010, Y. Gao et al. 2010], the recommender system is designed by suitable analysis of the blogs or travelogues of past users. City land marks are determined using graph search methods applied to appropriate features extracted from blogs in [R. Ji et al. 2009].

3. TRAVEL RECOMMENDATION

The topics in travelogues or blogs are mined in order to provide route recommendation and popular destinations using a probabilistic approach in the work [Q. Hao et al. 2010]. In the work [Y. Gao et al. 2010] recommendation is made through automation of recognition and ranking based on trajectory information, user profiles from online travel guides and metadata of photos. The use of travelogue or blog based data in recommendation is limited to providing location information as the systems faces the challenges of mining thorough unstructured data and large noise. The use of geo tagged photos has been made recently in some works. In [D. J. Crandall et al. 2009] large scale photos are used to mine import landmarks over many cities and claims geo tagged photos and time stamps can be utilized to provide better routes of travel to the user. Y. Arase et al.(2010) mines the trip pattern from the geo tagged photos to determine frequent trip patterns and recommendations based on similar information for inter city travel. X. Lu et al.(2010) concentrates on information from textual blogs along with geo tagged photos to establish landmarks and in turn discover paths and recommend route plans. This approach combines the incomplete paths and provides suggestion based on graph analysis and dynamic programming.

An-Jung Cheng et. al. (done a research in personalized travel recommendation by mining people attributes from geo tagged photos. Although existing system architecture is similar to proposed system but their work is restricted to people attributes such as gender, group type and age .Drawback of existing system is that it does not recommend which season is best for location to visit for gender or group type or age. As some locations may not be preferable

Download English Version:

<https://daneshyari.com/en/article/489893>

Download Persian Version:

<https://daneshyari.com/article/489893>

[Daneshyari.com](https://daneshyari.com)