Travel Package Recommendation System

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Abstract: Online travel package informations for tourist is playing vital role nowadays. The online travel information imposes an increasing challenge for tourists who have to choose from a large number of available travel packages for satisfying their personalized needs. The TAST Model can represent travel packages and tourists by different topic distributions, where the topic is generalized on both the tourists and the locations and seasons of the landscapes. Based on the Topic Model representation, this project proposes a cocktail approach to generate the lists for personalized travel package recommendation. This project extends the TAST Model to the TRAST Model for capturing the latent relationships among the tourists in each travel group.

Keywords: Online travel information, all good reputation

I. INTRODUCTION

Rapid growth of online travel information imposes an increasing challenge for tourists who have to choose from a large number of available travel packages for satisfying their personal needs. To increase the profit, companies have to understand the preferences from tourists and have to serve more suitable packages. Demand for best travel services is expected to increase dramatically.

Despite of the increasing interests, distinguish personalized travel package recommendations from traditional recommender systems remains pretty open. Indeed, there are many technical and domain challenges inherent in designing and implementing an effective recommender system for personalized travel package recommendation. The travel companies need to actively create new tour packages to replace the old ones based on the interests of the tourists. To address these challenges, in our preliminary work, this paper proposed a cocktail approach on travel package prioritization. First analyze the characteristics of the existing travel packages. Travel time and travel destinations are divided into different seasons and areas. Then, this project develops a tourist-area-season topic (TAST) model, which can represent travel packages by different topic distributions. In the TAST model, topics are extracted and is conditioned on both the tourists and the intrinsic features (i.e., locations, travel seasons) of the landscape. TAST model can represent the content of the travel packages and the interests of the tourists. A cocktail approach is developed for personalized travel package recommendation by considering some additional factors including the interest of tourists, the tariff of travel packages, and the problem of new packages. Experimental results on real-world travel data show that the TAST model can effectively capture the unique characteristics of travel data and the cocktail recommendation approach performs much better than traditional techniques. We further study some related topic models of the TAST, and it explain the similar travel package recommendation strategies based on them. This paper proposes the tourist-relation-area-season topic model, it understand the reasons why tourists form a travel group. personalized package recommendations is helpful for capturing the latent relationships among the tourists in each travel group. We conduct systematic experiments on the real world data. These experiments demonstrate that the TRAST model can be used as an assessment for travel group automatic formation but also provide more insights into the TAST model and the cocktail recommendation approach. The contributions of the TAST, the cocktail, and the TRAST model for travel package recommendation, where each dashed rectangular box in the dashed circle identifies a travel group and the tourists in the same travel group are represented by the same icons. The aim is to make personalized travel package recommendations for the tourists. The users are the tourist and the items are the existing packages and exploit a real world travel data set provided by a travel company.
II. RELATED WORKS

A. CYBER GUIDE PROTOTYPE

Cyber guide prototypes developed for indoor and outdoor use on a number of different hand-held platforms and discuss the general issues that have emerged in context-aware applications. Cyber guide prototypes [1], provides information for the tourist and describes the location they are visiting, so a reasonable packaging will be informed. The ideal hand-held device will have a screen and pen, access to substantial storage resources possibly through an internal device such as a CD drive, or through substantial communication like cell phone, pager, data radio interface providing access to other storage servers such as the Web an audio input and output interface with speech generation and potentially sophisticated voice recognition, and a video input and output interface. The video input a video camera will point the user to interpret user gestures symbols in the environment. The video output integrated into the main screen or be a separate video display device, such as an attached screen, the user uses the display glass.

Future computing environments promise to free the user from the constraints of desktop computing, researchers are investigating what applications maximally benefit from mobility. When visiting cities as tourists people do not make v detailed plans. It will be useful to support the user choice with contextual information presentation.

The long-term goal in an application is to know where the tourist is, what they are looking for and can predict and answer questions they might pose, and provide the ability to interact with other people and the environment. The short-term goal is to prototype versions of Cyberguide on commercially available PDAs and pen-based PCs in which context-awareness simply meant the current physical position and orientation of the Cyber guide unit. Position information improves the utility of a tour guide application. As the prototypes of Cyber-guide evolve, it has been able to handle more of the user's context, such as where the tourist have been, and increased the amount in which the tourist can interact and communicate with the place and people they are visiting.

B. RECOMMENDATION METHOD

The recommendation methods represents that the user is recommended items similar to the ones the user preferred in the past. Content-based, collaborative and hybrid recommendation approaches are classified and clustered together. The Collaborative recommendations mentions that the user is recommended items that people with similar tastes and preferences liked in the past. In addition to recommender systems that predict the absolute values of ratings that individual users would give to the yet unseen items. For example, in a movie recommendation application preference-based filtering techniques would focus on predicting the correct relative order of the movies, rather than their individual ratings. It focuses primarily on the rating-based recommendation systems.

C. LATENT DIRICHLET ALLOCATION

LDA is a generative probabilistic model [5] for collections of discrete data. LDA is a three-level bayesian model. In the context of text modeling, it provide an explicit representation of a document. It represent efficient approximate inference techniques based on variational methods and an EM algorithm for empirical Bayes parameter estimation. The report results in document modeling, classification, and filtering.

It consider the problem of modeling text corpora and other collections of discrete data. In this it find short descriptions of the members of a collection that enable efficient processing of large collections while preserving the essential statistical relationships that are useful for classification, detection, summarization. Information retrieval has been made on this problem.

III. SYSTEM ANALYSIS

In the proposed system, to make the travel selection easier, the recommendation is provided to the tourists. This analyzes the characteristics of the existing travel packages and develops a tourist-area-season topic model. TAST model represent travel packages and tourists by different topic distributions, where the topics are conditioned on both the tourists and the intrinsic features (i.e., locations, travel seasons) of the landscapes.

Based on topic model representation, propose a cocktail approach to generate the lists for personalized travel package recommendation. Furthermore, extend the TAST model to the tourist-relation-area-season topic (TRAST) model for capturing the latent relationships among the tourists in each travel group. Finally, evaluate the three models TAST, TRAST and the cocktail recommendation approach on the real-world travel package data.

To address these challenges, in our preliminary work, proposed a cocktail approach on personalized travel package recommendation. Specifically, first analyze the key characteristics of the existing travel packages. In this travel time and travel destinations are divided into different seasons and areas. TAST model, which can represent travel packages and tourists by different topic distributions. In the TAST model, the topics are generated on both the tourists and the intrinsic features (i.e., locations, travel seasons) of the landscapes.

As a result, the TAST model can well represent the content of the travel packages and the interests of the tourists. A cocktail approach is developed for personalized travel package recommendation by considering some additional factors including the seasonal behaviors of tourists, the prices of travel packages. The experimental results on real-world travel data show that the TAST model can effectively capture the unique characteristics of travel data and the cocktail recommendation approach performs much better than traditional techniques.
The tourist-relation-area-season topic (TRAST) model, understand the reasons why tourists form a travel group. It is helpful for capturing the latent relationships among the tourists in each travel group. In addition, conduct systematic experiments on the real world data. TRAST model can be used as an assessment for travel group automatic formation but also provide more insights into the TAST model and the cocktail recommendation approach.

A. ADVANTAGES OF PROPOSED SYSTEM

It goes beyond personalized package recommendations and is helpful for capturing the latent relationship among the tourists in each travel group. It aims to make personalized travel package recommendations for the tourists.

IV. ARCHITECTURE DESIGN FOR TRAVEL PACKAGE RECOMMENDATION SYSTEM

![Diagram of the architecture design](image)

V. DESIGN IMPLEMENTATION

Methodologies are the process of retrieving exact information what the user looking for. Here are the modules and explanation for the modules given for the effective function of the system.

A. MODULES USED

- Input Processing Module
- Recommendation Module
- Clustering Module
- Analysis Module

A. INPUT PROCESSING MODULE

This module creates the users required in this project. The user uses the system to get the travel package recommendation. The expert provides the ratings for the packages, the input provided by the user is processed in order to validate and provide the appropriate recommendation to the user.

B. CLUSTERING MODULE

The Tourist Area Season Topic Model is composed of the following models.

- TT Model
- TAT Model
- TST Model

The cocktail module is a hybrid recommendation strategy model. Collaborative filtering will be used for ranking the candidate packages. The new packages are added into the candidate list by computing similarity with the candidate packages generated previously. Collaborative pricing is used to predict the possible price distribution of each tourist and reorder the packages.

The TRAST module identifies the latent relationship between two tourists for each package in the dataset. By considering tourist relationships, the TRAST model can be used for travel group formation. The results of these models are being clustered in order to provide a valid recommendation to the tourists.

C. RECOMMENDATION MODULE

Based on the clustering process using the k-means algorithm, the results are clustered and processed according to the need of the user based on the topic, area and season respectively. Moreover, the recommendation is also based on the pricing of the previously travelled tourists.

D. ANALYSIS MODULE

In the analysis module, the performance values of the three models are shown. Based on the results produced by the analysis, this project can conclude the model that works efficiently in order to provide better recommendation to the users than the other models.

VI. CONCLUSION AND FUTURE WORK

In this paper, a study on personalized travel package recommendation is presented. This project first analyzed the characteristics of travel packages and developed the TAST model, for travel package representation. The TAST model identifies the interests of the tourists and extract the spatial-temporal correlations among landscapes. Then, AST model is for developing a cocktail approach on personalized travel package recommendation for tourists. This cocktail approach is a hybrid recommendation strategy and as the ability to combine several constraints existing in the real-world scenario. Furthermore, this project extended the TAST model to the TRAST model, identifies the latent relationships among tourists in each travel group. Finally, project conducted on real-world travel data. It demonstrate that the TAST model identifies the unique characteristics of the travel packages, the
cocktail approach perform better travel package recommendation, and the TRAST model can be used for travel group automatic formation. This is represented using the rating provided by the tourists after the recommendation results.

In the future, this project can be extended to a distributed scenario in which the project can be hosted and can be used by the tourists online. During this online utilization of this system, the travel package recommendation will be provided to the users online so that the tourists will be able to book their travel package on the spot.

REFERENCES