

# User Preference Perspective for Implementing Personalized Travel Package Recommendation System

Swapnali Ravindra Teli

Department of Computer Science and Engineering,  
Ashokrao Mane group of institute, Kolhapur

**Abstract:-** In today's market, recommender techniques are showing a considerable growth. Many travel packages are present on different websites and also you get these packages from different tourist companies to all the places over the world. You just need to decide a package which is best suits for you. Many of customers are facing problem of deciding the best package as she/he has to browse multiple websites, contact many travel agents and etc. which is a lengthy process and it is very hectic. There should be a system where the user should find the best package of his/her choice on single click. To tackle this issue, we endorse Travel Package Recommendation System which offers the best package among all the other packages which is of your choice and also in your budget. This system will help tourist to choose the best travel package among all the package deals on the web. On multiple demands of tourist that is, a customer will select a travel package based on the recommendations provided by the previous customers who had experience with the package.

**Keywords:-** Recommendation System.

## I. INTRODUCTION

Exploration can be made if you get a free time or it can be for business purpose. Numbers of travel agencies are providing services to their customers through the web. Numbers of options are available on internet today. The tourists select their own Travel Package according to their personal interest.

The travel companies concentrate on the interest associated with tourist making sure to increase their particular market value and supply enormous package deals, so that they can make their travel package more effective. Now-a-days Recommender system is becoming very popular and people are getting attracted to it, as you only need to give your preferences here and best suited packages will be displayed on your screen within short period of time. The Travel Packages will be displayed based on the preferences given by the tourist. By using tourist, area and season as our inputs we can represent our travel data in the best form. A cocktail approach is on personalized travel package recommendation to address the challenges. Specifically, first analyze the key characteristics of the existing travel packages.

## II. RELATED WORK

Recommender systems are categorized into two types: Content – based filtering and collaborative filtering. Content-based filtering is the association between user problems and the descriptions of items. It uses feature based system to recommend other item similarities to what the user likes, based on their previous feedbacks and actions. On the other hand, the collaborative filtering approach makes recommendations without content information; it uses similarities between items and users to provide recommendations. With the abundance of tourism and Web technologies, many people have shared their travel experiences on the Web, using this data collaborative filtering models recommend an item to users. Then travelogues ample content information, particularly including location-representative knowledge. The location indicative information in travelogues can make easier other tourist trip planning, only when it is correctly extracted and summarized.

## III. PROPOSED SYSTEM

For implementing an effective recommender system, many technical and domain challenges are there. First challenge is that the travel data are much fewer and meager than the other traditional items like movies for recommendation, because watching a movie is cheaper than the cost of a travel. Second, every travel package consists of many perspectives and thus, has important complex spatial-temporal relationships. Therefore we proposed a cocktail approach on personalized travel packages recommendation to tackle these problems. System consist of TAST (Tourist-Area-Season-Travel) model in which all the user preferences from the user are taken like continent, season, cost, number of days and according to that all the packages are generated. Another model is TRAST (Tourist-Relation-Area-Season-Travel) model in which the grouping is done between the people based on the package they have selected.

### A. Design Goals

- Data regarding travel are fewer and meager than the conventional methods
- Usually the travel package recommendation systems are very complicated; the design of this system is simpler.
- By using continent, season, cost, theme as our input to the system we can present the data in the finest form.
- The weighted average entropy algorithm will help the customer to find out best or most preferred package based on theme, continent, and season.

### B. System Architecture

To develop personalized travel package recommendation system based on user preferences, travel time and travel destination are further parts according to the seasons and areas. When a tourist logged in to the Travel Package Recommendation System, he/she has to give values for Season, Theme, Continent, Cost, number of days as an input. Based on these input values, the recommendation system will start processing and analyzing the travel log to display best package.

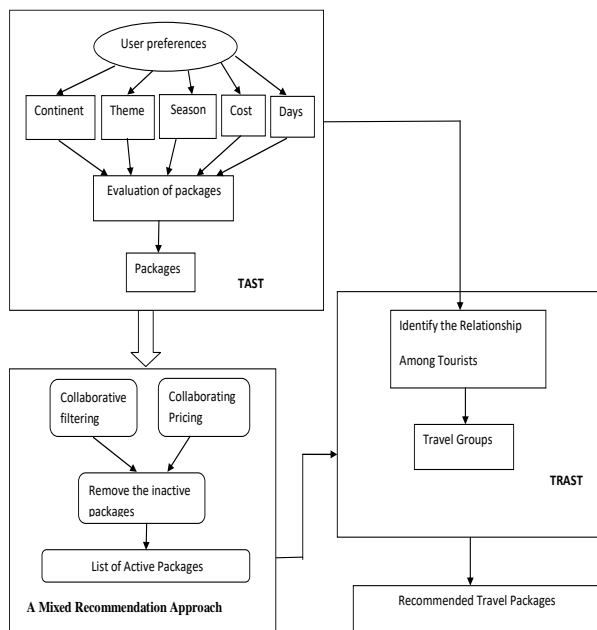


Fig. 1: System Architecture

### C. Detailed Architecture

#### a) TAST Model

TAST Model consists of the core requirement and purpose of the project that is user preferences. System asks user to enter its choice such as the continent to which it wants to travel, the season and budget is another important factor when one decides to travel so cost is also entered. The number of days the customer wants to travel is also taken from the user. Four themes are provided in this system that is adventure, honeymoon, beaches and holidays out of these options user selects one option where it wishes to travel.

#### b) TRAST Model

In TRAST model we get the travel group relationships of the tourists. The tourist in each travel group are grouped together in a single record, thus it is a very clumsy process. For example if a person wishes to travel Kashmir and has selected the Kashmir package and there is one more customer who wants to travel to Kashmir and selects the same package then both of them will be added into one group. In many tours and travel agencies this work is a tedious because they do it manually. Even if they use computers then they don't get data in a proper format. This system therefore reduces this hectic process of forming groups of the travelers.

#### c) A Mixed Recommendation Approach

In the TAST model all the user preferences are taken. This input is used for displaying the packages with the help of mixed recommendation approach. First the collaborative filtering is done in which the packages are filtered according to the continent. Then collaborative pricing is done that is the packages are filtered based on the price that has been entered by the customer. All this results are combined together and all the inactive packages that is the package which does not satisfy the user preferences are removed and all the active packages are displayed.

#### d) Admin Module

Admin is provided with lots of options such as admin can add new package for that admin has to fill all the package information, delete the package, update the package and create groups of the tourist. If admin wants to see all the packages that are available then view package is available to the admin. If admin wants to give certain authorities to the another person or wants to add one more admin then admin has add admin option.

## IV. METHODOLOGY

First, the entire year that we are considering as a full season get partitioned into several seasons recursively. Here we used the weighted average entropy (WAE) algorithm, for every iteration. To determine the weighted average entropy we need package id, theme, destination, cost, area from package table where theme is the 'where' condition which is an input. We analyzed all these analogies to find the best split using weighted average entropy (WAE):

$$WAE(i; S^P) = \frac{|S_1^P(i)|}{|S^P|} \text{Ent}(S_1^P(i)) + \frac{|S_2^P(i)|}{|S^P|} \text{Ent}(S_2^P(i)),$$

where  $S_1^P(i)$  and  $S_2^P(i)$  are two sub themes of theme  $S^P$  when being splinted at the  $i^{\text{th}}$  season. The best split month induces a maximum information gain given by  $\Delta E(i)$  which is equal to  $\text{Ent}(S^P) - WAE(I; S^P)$ .

## V. CONCLUSION

This system will recommend you a best Travel package to reach out for your dream destination. According to the user's input continent, number of best suited travel packages will be recommended. Because of this system user can choose the best continental package deal. Users can select their dream package in short period of time. Finally, the goal of the project is to build a businesslike efficient system which is effectual in terms of cost and money.

**REFERENCES**

- [1.] Liu, E. Chen, H. Xiong, Y. Ge and Z. Li, "A Cocktail approach for Travel Package Recommendation System, " 2014.
- [2.] Y. Ge et al., "Cost-Aware Travel Tour Recommendation," Proc. 17th ACM SIGKDD Int'l Conf. Knowledge Discovery and Data Mining (SIGKDD '11), pp. 983-991, 2011.
- [3.] F. Lorenzi, S. Loh and M. Abel, "Personal Tour: A Recommender System for Travel Packages, " 2013.
- [4.] Rohini Sree Kanneboina, Travel Package Recommendation System, Texas A&M University-Corpus-Christi, TX (Thesis) ,2015.
- [5.] Mrs. A. Sharmila Banu, Mrs. M. Abirami, A Versatile Approach for Travel Package Recommendation Using Cocktail Alogorithm,2015.
- [6.] Ms.R.Priyanka, Mr.T.Yoganandh, A Novel Approach for Travel Package Recommendation Using Cocktail Algorithm, 2014