

Location Based Restaurant Recommendation system

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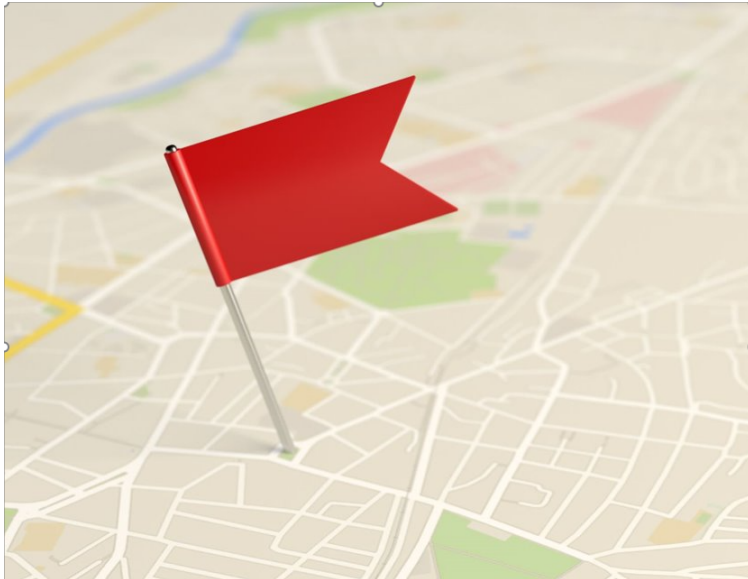
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Restaurant Recommendation system based on location

system



Abstract

Abstract



The Recommendation system is the unavoidable thing for whatever we buy or go to the new place.



Restaurants also need recommendation systems in terms of attracting more customers in the management side and tasting favorite, famous food in the restaurant in customers side.

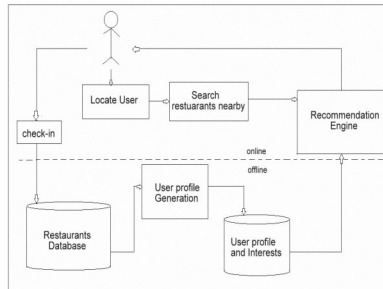


In reality finding the favorite food and famous food especially in new area is a challenging task.

Motivation

Motivation

- The motive of this paper is to present an implemented design of the recommendation system. The system architecture presented in Figure 1 can be simply divided into two sections, one which has online activity, and the other which processes data offline. When the user is in motion, i.e., his geo-position changes notably, the system goes online and recommendation module becomes active, retrieving nearby and restaurants and ranking them, based on their properties, according to the scores generated offline.
- The offline part generally remains in a non-functional mode when the user is stationary. The work of the offline system is to generate a user interest profile, using a Machine Learning algorithm, from the data set that keeps getting modified whenever the user checks-in a restaurant.



- This autonomous switching of the system between online and offline modes guarantee that there is no wastage of power and bandwidth when it is not required.
- Based on the type of functionalities , the system can be divided into different modules, i.e., database layer, recommendation engine, user profile generator and online interaction layer.
- The user will be tracked through Web 2.0 technologies [9] namely HTML5 and the data set will be retrieved simultaneously from Foursquare. Based on the user's checkin to any restaurant, the data will be added to the restaurant data set and will then be evaluated for user interest profile. This application will mostly be running in the background, as participation from user is avoided as much as possible.

Introduction

Contents



Overview



Working Principle



Features



Application

Overview

- A recommendation system is a subclass of Information filtering Systems that seeks to predict the rating or the preference a user might give to an item. In simple words, it is an algorithm that suggests relevant items to users.
- Restaurants also need recommendation systems in terms of attracting more customers in the management side and tasting favorite, famous food in the restaurant in customers side. In reality finding the favorite food and famous food especially in new area is a challenging task. By using this recommendation system for restaurants based on food rating distribution, service rating distribution by calculating the matrix density. With addition to that we build the popularity based recommender model for recommending restaurants to the customers.
- Ranking scheme can be employed based on scores. The output of the model may be recommending most popular restaurants and most popular food items served by the appropriate restaurant. For betterment of the model we accompany collaborative filtering with singular value decomposition. Evaluation of the model can be completed with RMSE. This experiment is executed on the Kaggle data set and we build a web based application is built using python's Flask web frame work.

Working principle

- LEARNING USER PROFILE
- RECOMMENDATION ENGINE
- IMPLEMENTATION

LEARNING USER PROFILE

- Restaurants are classified as 'like' or 'dislike', depending on the taste of the user.
- Each restaurant would account for n entries, where n is the number of check-ins made. Further, if he likes two restaurants, which one would he favor more? We solve this problem by using Naïve Bayes Classifier algorithm to recognize the factors that the user likes about a restaurant and to what degree does he like them.

Naïve Bayes

- Naïve Bayes algorithm is a supervised learning algorithm, which is based on Bayes theorem and used for solving classification problems
- Among the two formulations of Naïve Bayes, we have found out that multinomial Bernoulli model would be more efficient in this context, as its calculations are based on word frequency information.
- The factors that the user likes about a restaurant and to what degree does he like them

RECOMMENDATION ENGINE

content...

IMPLEMENTATION

content...

Conclusion

Conclusion

Normal text Alert Text Example Text Emphasis Text

Simple block

■ ...

Example block

■ ...

Alert block

■ ...

A purple box

An orange box

A gray box

My price table

Color	Price 1	Price 2	Price 3
Red	10.00	20.00	30.00
Green	20.00	30.00	40.00
Blue	30.00	40.00	50.00
Orange	60.00	90.00	120.00

References

References

