Chapter 10

Toward Geospatial Collaborative Tourism Recommender Systems

Zahra Bahramian
University of Tehran, Iran

Rahim Ali Abbaspour
University of Tehran, Iran

Christophe Claramunt
Naval Academy Research Institute, France

ABSTRACT

Tourism activities are highly dependent on spatial information. Finding the most interesting travel destinations and attractions and planning a trip are still open research issues to GIScience research applied to the tourism domain. Nowadays, huge amounts of information are available over the world wide web that may be useful in planning a visit to destinations and attractions. However, it is often time consuming for a user to select the most interesting destinations and attractions and plan a trip according to his own preferences. Tourism recommender systems (TRSs) can be used to overcome this information overload problem and to propose items taking into account the user preferences. This chapter reviews related topics in tourism recommender systems including different tourism recommendation approaches and user profile representation methods applied in the tourism domain. The authors illustrate the potential of tourism recommender systems as applied to the tourism domain by the implementation of an illustrative geospatial collaborative recommender system using the Foursquare dataset.

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1. INTRODUCTION

Tourism as a social, cultural, and economic phenomenon entails the movement of people to countries or places outside their living environment. Tourism activities are highly dependent on spatial information such as places of interest and attractions that are likely to present an interest for potential visitors. Planning a trip and finding the most appropriate travel destinations and Points of Interests (POIs) are still considered as open research issues in GIScience research applied to the tourism domain. A POI can represent a specific tourist attraction that a user may find interesting to visit such as a museum, historical and cultural buildings. Nowadays, the Internet and the World Wide Web offer huge amounts of free information on travel destinations that may be useful for users wishing to plan a visit. However, the large extent of information available is often overwhelming and time consuming for most users as selecting the most appropriate POIs and planning a tourism trip according to their own preferences is far from being a straightforward task. In order to overcome this information overload problem, Tourism Recommender Systems (TRSs) have been recently introduced in order to suggest items that are most likely of interest to a given user. The main principles behind TRSs are that items of interest should be identified and recommended by taking into account the user’s profile and preferences. In other word, TRSs infer users’ needs by considering either explicit or implicitly given users’ profiles and even by comparing such profiles to users with similar preferences.

This chapter provides a survey of TRSs, its main objectives are as follows:

1. To briefly review current tourism recommendation approaches as well as pros and cons. We introduce different classes of tourism recommendation approaches including from content-based, collaborative, knowledge-based, demographic, to hybrid TRSs. Content-based TRSs suggest items that are similar to the ones that the user liked before, while collaborative TRSs take into account items that similar users liked in the past. Knowledge-based TRSs suggest items based on specific domain knowledge and user’s preferences. Demographic TRSs suggest items based on some basic user demographic. Finally, hybrid TRSs take into account the combination of the above mentioned techniques.

2. To review current approaches oriented to the representation of user profiles in TRSs. We will introduce user profile representations such as the ones based on a list of keywords (i.e., as categories associated to the users), vectors (i.e., where each vector value denotes a degree of interest associated to a given item), semantic models (i.e., based on domain-based ontologies) and uncertainty-based models (i.e., to take into account the uncertainty associated to the information stored in the user profile).
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