RECOMMENDING INTERESTING LANDMARKS IN PHOTO SHARING SITES

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Abstract: With the rapid development of location-acquisition technologies (GPS, GSM networks, etc.), more and more unstructured, geo-referenced data are accumulated on the Web. Such abundant location-based data imply, to some extent, users' interests in places, so these data can be exploited for various location-based services, such as tour recommendation. In this paper, we demonstrate that, through utilizing the location data from a popular photo sharing web site such as Flickr, we can explore interesting landmarks for recommendations. We aim to generate personalized landmark recommendations based on geo-tagged photos for each user. Meanwhile, we also try to answer such a question that when we want to go sightseeing in a large city like Beijing, where should we go? To achieve our goal, first, we present a data field clustering method (*DFCM*), which is a density-based clustering method initially developed to cluster point objects. By using *DFCM*, we can cluster a large-scale geo-tagged web photo collection into groups (or landmarks) by location. And then, we provide more friendly and comprehensive overviews for each landmark. Subsequently, we present an improved user similarity method, which not only uses the overview semantic similarity, but also considers the trajectory similarity and the landmark trajectory similarity. Finally, we propose a personalized landmark recommendation algorithm based on the improved user similarity method, and adopt a TF-IDF like strategy to produce the nontrivial landmark recommendation. Experimental results show that our proposed approach can obtain a better performance than several state-of-the-art methods.

1. Introduction

With the increasing availability of location-aware mobile devices (e.g., GPS-enabled portable devices), wire-less communication technologies (e.g., 3G and Wi-Fi), map

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