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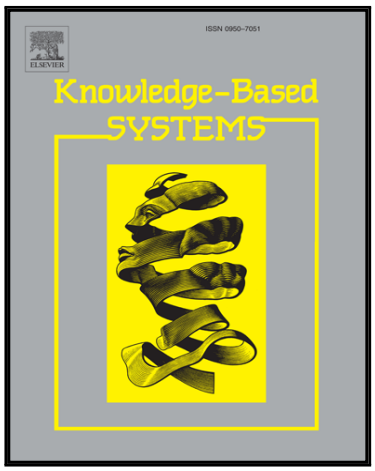

Towards Social-aware Interesting Place Finding in Social Sensing Applications

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Towards Social-aware Interesting Place Finding in Social Sensing Applications

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Abstract

This paper develops a principled approach to accurately identify interesting places in a city through social sensing applications. Social sensing has emerged as a new application paradigm, where a crowd of social sources (humans or devices on their behalf) collectively contribute a large amount of observations about the physical world. This paper studies an *interesting place finding* problem, in which the goal is to correctly identify the interesting places in a city. Important challenges exist in solving this problem: (i) the interestingness of a place is not only related to the number of users who visit it, but also depends upon the travel experience of the visiting users; (ii) the user's social connections could directly affect their visiting behavior and the interestingness judgment of a given place. In this paper, we develop a new *Social-aware Interesting Place Finding Plus (SIPF+)* approach that addresses the above challenges by explicitly incorporating both the user's *travel experience* and *social relationship* into a rigorous analytical framework. The SIPF+ scheme can find interesting places not typically identified by traditional travel websites (e.g., TripAdvisor, Expedia). We compare our solution with state-of-the-art baselines using two real-world datasets collected from location-based social network services and verified the effectiveness of our approach.

Keywords: Interesting Place Finding, Social Dependency, Social Sensing, Crowdsourcing, Expectation Maximization

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