

Crowds replace Experts: Building Better Location-based Services using Mobile Social Network Interactions

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Abstract. Location-based services are growing in popularity due to the ubiquity of smartphone users. The relevance of location-based query results is very important, especially for mobile phones with limited form factor. Location-based data is real-time and highly dynamic; this introduces challenges in indexing and ranking places. The growing popularity of mobile social networks, such as Twitter, FourSquare and Facebook Places, presents an opportunity to leverage user interactions on these networks to build better location-based services. In this paper, we present SocialTelescope, a location-based service that automatically compiles, indexes and ranks locations, based on user interactions with locations in mobile social networks. We implemented our system as a location-based search engine that uses geo-tweets by Twitter users to learn about places. We evaluated the coverage and relevance of our system by comparing it against current state-of-the-art approaches including page-rank (Google Local Search), expert-based (Zagat) and user-review based (Yelp). Our results show that a crowd-sourced location-based service returns results that are at least as relevant as those returned by current approaches, at a substantially lower cost.