

## Context-Aware Point-Of-Interests Recommender Systems Using Integrated Sentiment and Network Analysis

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**Abstract :** Recently, user's interests for location-based social network service increases according to the advances of social web and location-based technologies. It may be easy to recommend preferred items if we can use user's preference, context and social network information simultaneously. In this study, we propose context-aware POI (point-of-interests) recommender systems using location-based network analysis and sentiment analysis which consider context, social network information and implicit user's preference score. We propose a context-aware POI recommendation system consisting of three sub-modules and an integrated recommendation system of them. First, we will develop a recommendation module based on network analysis. This module combines social network analysis and cluster-indexing collaboration filtering. Next, this study develops a recommendation module using social singular value decomposition (SVD) and implicit SVD. In this research, we will develop a recommendation module that can recommend preference scores based on the frequency of POI visits of user in POI recommendation process by using social and implicit SVD which can reflect implicit feedback in collaborative filtering. We also develop a recommendation module using them that can estimate preference scores based on the recommendation. Finally, this study will propose a recommendation module using opinion mining and emotional analysis using data such as reviews of POIs extracted from location-based social networks. Finally, we will develop an integration algorithm that combines the results of the three recommendation modules proposed in this research. Experimental results show the usefulness of the proposed model in relation to the recommended performance.

**Keywords :** sentiment analysis, network analysis, recommender systems, point-of-interests, business analytics

**Conference Title :** ICCIS 2017 : International Conference on Computer and Information Sciences

**Conference Location :** Zurich, Switzerland

**Conference Dates :** April 20-21, 2017