Título: **Recommending Places based on the Wisdom-of-the-Crowd.**

Data: **10/06/2016** Horário: **10h** Local: **Sala de Aula 01 - Bloco 952**

Resumo:

The collective opinion of a great number of users has been seen as a powerful tool for solving problems, popularly known as wisdom of the crowd. As suggested by Surowiecki in his books [133], large groups of people are smarter than an elite few, independently how brilliant at solving problems or coming to wise decisions they are. Such phenomenon combined by the huge amount of data available on the Web has propitiated the development of solutions considering the wisdom-of-the-crowd for a variety of problems in different domains, such as recommender systems,, social networks and combinatorial problems. The largest part of the data on the Web has been generated in the last few years by billions of users around the globe, which carries astonishing and striking features regarding the daily activities of the people related to the urban mobility, tourism behavior, sentiments, preferences and interests, and so on. This flood of data has brought great opportunities to discovery individual and collective preferences to facilitate the access of information oriented to the people needs, by providing personalized services, recommendation of relevant and interesting items (e.g. news, places, movies), and by exploiting experiences of groups of people as a collective behavior to augment the experience of other ones. This latter, in particular, illustrates the important scenario where the discovery of collective behavioral patterns, wisdom-of-the-crowd, may favor the experience of individual users. This thesis therefore has the objective of taking advantage of the wisdom of the crowd to better understand the human mobility behavior to achieve the final purpose of supporting users (e.g. people) through intelligent and effectiveness recommendations. We accomplish this objective by following three main lines of investigation. In the first line of investigation we conduct a study about human mobility using the wisdom-of-the-crowd, culminating in the development of an analytical framework that offers a methodology to understand how the points

of interest of a city are related to each other from the displacement of people. The second line of investigation exploits the wisdom-of-the-crowd collected through user-generated content to recommend itineraries in tourist cities. To this aim, we propose an unsupervised framework, called TripBuilder, that leverages large collections of Flickr photos, as the wisdom-of-the- crowd, and points of interest from Wikipedia to support tourists in planning their visits in the cities. Based on the theoretical framework, we designed and developed a platform encompassing the main features required to create personalized sightseeing tours. This platform has received many interest in the research community since it has been crucial to understand the tourists' needs when they are planning a visit to a new city, which led to outstanding scientific results. In the third line of investigation, we exploit the wisdom-of-the-crowd to leverage recommendations of groups of people (e.g. friends) who can enjoy an item (e.g. restaurant) together. We propose GroupFinder to address the novel user-item group formation problem aimed at recommending the best group of friends for a pair.

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