Chapter 2

Research of Multichannel User Data to Identify the Degree of Similarity: Multiparameter Social Search Based on Social Preferences and User Movements

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ABSTRACT

This chapter introduces the method to assess similarity based on Facebook Graph API and user movements. All movements of users are collected and analyzed. The chapter presents an additional method for analyzing user-generated images on Instagram Graph API. The chapter presents a two-step multiparameter algorithm that generates recommendations based on user social activity and movements. A flexible mechanism for the calculations of time that one spends on a variety of social activities to more accurately identify the relationships between users is presented. To reduce the load on the application, the algorithms of data analysis and transfer optimization are proposed. The ultimate result of the study is to build a platform based on the “client-server” model and includes a mobile app on the iOS platform and server, which would be set up on the “LAMP” platform (L - Linux operating system, A - Apache web server, M - MySQL database, P - PHP programming language). The given result can be used and applied in various spheres of our lives to identify different relationships between people.

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INTRODUCTION

In recent years, cellular operators across the world have seen a rapid growth of mobile broadband subscribers. At the same time, social and different geolocation services for mobile platforms like iOS and Android are also increasing dynamically. In modern world people use their smartphones almost all the time and like to share information about their preferences, as well as their location with friends. Every year we see that the daily mobility of people increases very fast. People intersect with a lot of other people and acquaintances, not even knowing about it. And each person has a certain range of movements. At the same time, across a variety of social networks there is a problem of choice and discover of new acquaintances among people with the same interests and lifestyle.

The purpose of this research is algorithmization and automation of relationships identifying the process between different people or a group of people through the social search based on the users’ preferences and movements. In this work we will apply a two-step algorithm that generates recommendations and from the output we can get quite clear assessment of communication between various users. This algorithm includes:

- Analysis of data obtained through Facebook API, which includes details of the users’ preferences in different areas.
- Analysis of data obtained from users’ tracking, including collection of data about the places most visited by the user.

Scientific novelty of the work consists in the fact that our algorithm uses a multivariable analysis of data obtained from the social network and users movements. As a result, we obtain an estimate of similarity score of two users with high accuracy and containing a plurality of different parameters.

RELATED WORKS

At the moment, almost all the works related to the research of social activity of users and their interests are aimed mainly at improving the content ad for a specific user. These types of works are focused on building a social graph that would demonstrate the relationships between users, as well as generating easy recommendations of users compatibility with each other, based only on the connection through friends (Xiang, Neville, & Rogati, 2009). The data from the social networks is used to generating of the recommendation and similarity score, with various degrees of approximation (Kumar, Novak, & Tomkins, 2006). Many other works are focused
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