INFORMATION
Volume 17, Number 10(A), pp.5003-5008
ISSN 1343-4500

On Exploiting Tag Information for Community Detection on Flickr

Minsoo Choy*, Woochul Sung*, Jae-Gil Lee*, Mun Yong Yi*, and Young-Ho Park**

*Department of Knowledge Service Engineering, KAIST
Daejeon 305-701, Korea

**Department of Multimedia Science, Sookmyung Women's University
Seoul 140-742, Korea

Abstract

The social network service (SNS) has been gaining increasing attention. Among the extant SNSs, our study focuses on Flickr, which is one of the most popular photo hosting and sharing websites. Users can upload and explore many photos on various subjects. In addition, users sharing common interests can become friends, and they can join the groups that match their interests in particular subjects. Facebook's friend recommendation has been proven to help users find potential friends easily, but Flickr is yet to offer friend or group recommendation services. For this reason, we propose a way of recommending photographically similar users and creating implicit user communities based on collective intelligence manifested through tag information. With a massive amount of tag data in Flickr, we represent users as feature vectors after carrying out tag preprocessing and selecting only important ones. Then, we construct a user network and detect several overlapping communities using the CPM. Overall, we expect that our study will be useful for many Flickr users and even Flickr itself.

Key Words: Flickr, Social Network Analysis, Community Discovery, Recommender System, Collective Intelligence

1. Introduction

In recent years, social network services (SNSs) such as MySpace, Facebook, and Flickr have been growing dramatically. These sites have attracted millions of users who are creating, sharing, and distributing information or contacts. The SNSs provide researchers and practitioners with excellent opportunities to study the characteristics of social networks in various ways [1, 2, 3].

Among the extant SNSs, we focus on Flickr (http://www.flickr.com), which is one of the most popular photo hosting and sharing websites. This service is widely used by many bloggers to host photos embedded in their blogs [4]. At Flickr, users can upload their own photos and read or write comments on other users' photos. Also, users can make friends, view the photos submitted by friends in one place, and join existing interest groups or create a new one to communicate with each other [5].

In this paper, we present an approach for finding *implicit* communities from Flickr. Our