Web 2.0 Based Intelligent Software Architecture for Photograph Sharing

Arzu Baloglu, Marmara University, Turkey
Mudasser F. Wyne, National University, USA
Yılmaz Bahcetepe, Marmara University, Turkey

ABSTRACT

With the development of Web 2.0 technologies, the sharing of photographs has increased. In this paper, the authors evaluate the art of photography, analyze how to develop intelligent photograph sharing system, and explain the requirements of such systems. The authors present an architecture of an intelligent Web 2.0 based system and in future hope to add more modules for retention of users on the system. The system focuses on Web 2.0 usage, web mining for personalization service, and brings a different approach to collaborative filtering.

Keywords: Client-Server Architecture, Collaborative Filtering, Photograph Sharing, Web 2.0, Web Mining

1. INTRODUCTION

Long ago the computer was introduced as a simple accounting and record keeping device but soon it motivated many other computer and IT related activities. Similarly, internet network that all over the world provides broad bandwidth to users, which allows users to transfer megabytes of data in seconds. Initially internet was more or less simply a social communication platform but now it is considered as one of the leading communication technology and one of the necessities of life. The extent to which business and research community as well as service sector utilizes web technology looks like, this technology and its associated services are going to expand even further. Therefore, in future, web technologies must be empowered by additional capabilities coupled with Semantic Web technologies to fulfill even broader and long term application promises.

In the past few decades the advancements in the field of IT has opened many more doors to various new kinds of internet applications. Social application is being one of them provide the environment for human social interaction and information sharing through web. This leads to the next phase in the Web’s evolution namely, Web 2.0. It has received lots of attention from web users, business services and IT professionals. Web 2.0 is also sometimes referred to as the wisdom web, people centric web and read/
write web (Murugesan, 2007). The cultural and social contribution brought by the Web 2.0 in the cyberspace is tremendous. It brings a new approach towards sharing information and interacting with other users over the internet in a collaborative manner thus providing opportunities for leveraging the web and engaging its users more effectively. This amalgamation of web technologies and social interactions has made Web 2.0 an important internet technology.

In this paper we concentrate on photograph sharing application and assume that internet users are willing to post and share their photographs and comments with other users. We describe a design of a photo sharing system using shared photo collections generated by multiple internet users. The system is based on a client-server architecture and focuses on new photographs sharing techniques and approaches.

2. DEVELOPMENT OF PHOTOGRAPHY

The traditional photographic process that has defined image reproduction for over 150 years and involves a long drawn series of chemical reactions. That begins with the capture of light on silver film and ends with transferring of the image onto paper or a transparency through the development processing. The final image is analog, which means it is composed of continuous gradients. There are number of issues related to traditional photography; the costs of films are high, there is no possibility to take an instant view of photographs taken on a screen, like digital cameras. In addition chemical processing of these films in darkroom is time consuming as well as not an easy process. Most importantly archiving these analog images in digital format is harder.

The traditional way to take a picture has not changed much with the advent of digital cameras (Merril, 2005) or has become a little easier, just point and press the button on a camera with automatic focus feature. Most digital images still start out from traditional media. However, digital photography offers more options for being creative with the end product, the images can be altered or digitally enhanced according to the photographer’s context in different ways easily and more artistically using readily available softwares. In addition, digital images can be easily saved on a digital storage medium and add to personal collection, or share them with friends and family via email or with any of the available photo sharing websites. There are number of approaches presented in the literature for sharing digital photos. An approach that includes tabletop interface is described in (Balabanovic, Chu, & Wolf, 2000) although it is good for sharing photos but it lacks the portability. Leonard and Marsden (2007) present a mobile application allowing users to share their digital images with other users. The approach synchronizes the display on multiple mobile devices in asynchronous way and limited to only to maximum of four users at a time.

A photo sharing site is the one that provides the means for a user to upload their digital images (usually photos from a digital camera, but technically any file saved in a common image format such as JPEG, GIF or PNG) to a third party online server, where they are stored and hosted for public or private access and display. There are many commercially available photo sharing services such as Kodak Gallery, Picasa, and Flickr. These sites provide sharing experiences and communication among users. Among these Flickr is one of the most popular photo sharing services. It also allows users to add labels or tags to the pictures by themselves as well as by others. These tags make retrieval of these pictures easy through proper organization. In addition, photographs can also be viewed over maps by using geotagged photographs. A collaborative guidance system for extracting information about the location of a user from a shared photo collection is proposed by Kadobayashi and Lim (2008). In this case tags attached to each photograph is associated to geographical information. However, Vronay and Davis (2006) argue that online photo sharing does not convey the emotion and feelings as in face-to-face setting. Other services that are also
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