

Fotowiki – Distributed Map Enhancement Service

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ABSTRACT

Fotowiki (FW) is a wiki-based map service that integrates visual and textual information with map. FW divides a geographical area into sub-areas. An individual responsible for providing information about a sub-area enters collected data into a wiki page. FW uploads distributed wiki-pages, and overlays the information on the map. This demonstration shows FW's architecture and functionalities.

Categories and Subject Descriptors

H.5.3 [Information interfaces and presentation (e.g., HCI)]: Group and Organization Interfaces

General Terms

Management, Design, Human Factors

Keywords

Wiki, information sharing, collaborative, photos

1. INTRODUCTION

While present Web-based map services [4, 6, 7, 8] are helpful for location lookup and route planning, much information is either unavailable to users or out of date. For instance, answering a query such as “local vegetarian restaurants” or “congested city blocks” requires non-trivial effort, if possible, by a current map service. To assist ease-of-use and fresh information finding on a map, we have implemented a wiki-based map service, named fotowiki (FW for short) [1]. FW divides a geographical area into sub-areas. An individual responsible for providing information about a sub-area enters data into a wiki page. FW uploads distributed wiki-pages periodically, and overlays the collected information on the map. FW provides both keyword queries and visual navigation to assist users to find useful, fresh information.

FW consists of three major components, map, distributed wiki-pages, and user interface. FW uses Google map as its map service. FW uses wiki as the vehicle to collect and disseminate distributed and up-to-date visual and textual information. The user interface of FW provides users intuitive way to navigate in the map/information integrated space to find desired information.

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We will detail the system architecture and functionalities in Section 3.

2. RELATED WORK

There have been efforts attempting to integrate information with Web maps. Blogmapper [10] established in 2003 allows users to associate blog entries with hot spots on the map. When a spot is clicked on, the corresponding blog entry appears. Blogmapper is limited by the capability of blog: an entry can be edited only by its created authors.

Mapwiki [11] and Geowiki [9] are wiki-based and provide update flexibility. Mapwiki collects and organizes geographically oriented comments. Any user can add comment to the map and read comments from other Mapwiki users. Mapwiki supports textual description but not photos nor hyperlinks. The markers (location icons) of Mapwiki are predefined on the map. On the contrary, Geowiki allows users to create markers, add comments, upload photos, and support hyperlinks. This system can share the information on the maps but it lacks the ability of enabling cross links between internal pages. Cross links between internal pages enable flexible and effective information retrieval. Moreover, discussion forum is a key missing piece in this system. Generally, discussion forum can be the medium to deliver extra information about a location.

3. SYSTEM DESCRIPTION

FW (Figure 1) is built on MediaWiki [2]. MediaWiki is an open-source, wiki software package that simplifies the process of creating Web pages and also maintains a change record so that any page can be reverted to prior state at any time. In addition, Google-map API [3] is used to embed Google maps [4] into FW so as to provide the geographic information, driving direction, and satellite/aerial imagery of desired area. A MySQL relational database serves as the backend storage for wiki pages, photos, and description data. In addition to addressing the limitations of the existing services discussed in the previous section, FW has the following features:

- *Incentive information-collection strategy.* FW allows signup of individuals on its sub-areas. (The top of Figure 2 shows that the UCSB campus is divided into sub-areas for competition.) An individual who fails to provide timely or quality updates will quickly lose her/his territory to more competent ones. The emerging “owners” of a territory share advertisement revenue of that area. Although FW currently does not connect to any advertisement agent, such incentive model ensures timely update of rich information.



Figure 1. Fotowiki Homepage.

- *Street-level view.* Street-level images are more natural and desirable for people to look at instead of aerial images. From the satellite/aerial images we can only tell the relative location on the map, but not the views of the surrounding area. To address this problem, FW deploys the street-level imagery at the markers. When users click on the markers, the photos taken inside the buildings or outside the roads are displayed to the users (Figure 2).
- *360-degree virtual tour.* FW would like the users to have the best possible experience while exploring the map. By introducing the virtual-tour functionality to FW, users can appreciate immersed experience about a spot. A virtual tour is created by using Apple QuickTime VR [12], and each 360-degree view of a spot requires 30 images of the surrounding area.

In summary, Fotowiki (FW) is a wiki-based platform which integrates map with wiki for information sharing and retrieval. In addition to the traditional aerial images provided by the Google map, FW propagates both the street-level views of the surrounding area and 360-degree panorama tour of a spot to the map. More importantly, the fine-grained information about a particular location, provided by its incentive information collection strategy, can substantially improve the usefulness of information. We envision that detailed information such as the daily special of a restaurant, the traffic condition of a street intersection, and much information alike will be provided because of the financial incentives. This demonstration shows the architecture, components, and functionalities of FW. The readers can extrapolate the possibilities of such a system.



Special Interest Floors

Scholars Floor

These floors are very popular and are comprised of students who have qualified for one or more of the following: Honors at Entrance (College of Letters & Science of Engineering Honors, Regents Scholar, and/or been accepted to the College of Creative Studies). Other students who have an interest in such an environment & space permits. Activities include dinners with faculty, study groups, and social events.



Figure 2. Street-level views.

4. REFERENCES

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