An Implementation of A Geolocation Information-sharing System

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Abstract—**SNS services using the Internet are more popular than ever. In particular, new services using photos and location information such as 'Instagram' and 'Foursqaure' have recently appeared. However, there is no service that allows users to browse to activities and post information about their current location easily. Therefore, we have developed a participatory system with a high regard for location information.**

Keywords-**Geolocation information-sharing service, Mobile applications, Collective Intelligence**

I. Introduction

Social Network Services (SNS) using the Internet have become extremely popular. Among them, the number of users of FaceBook and Twitter are exploding. In addition, new services using photos and location information, such as 'Instagram' and 'Foursqaure,' have been launched. However, there is no service that allows users to browse to activities and to post information about their current location easily[1].

We implemented a geolocation information-sharing system while focusing on the following three points to effectively utilize location information. (A) Users should be able to post their activities on a map freely and easily. (B) The system should support users in easily finding and learning about posted activities on the map. (C) Users should be able to post and browse using mobile devices at anytime. Giving attention to these points made it possible to build a system that makes us feel closer to location information than ever before.

Here, we look at some examples of real use cases. First, a user can very easily find the other users' activities in his/her vicinity from a mobile phone. This deepens the relationships among users and develops new social networks. Second, when a user visits a place for the first time or moves to unknown areas, he/she might feel anxiety. Our system can navigate such users by showing nearby activities posted by other users and friends. Third, users can post evaluation information or recommendations for restaurants and stores on the map.

In this extended abstract, we give an overview of the developed system.

II. Overview of a Geolocation Information-sharing System

The current implementation of our system provides mobile applications (iOS/ObjectiveC and Android/Java) and a web application. These applications have been designed to be as simple as possible.

Our system offers three main functions: *Posting*, *Commenting*, and *Browsing*. In this system, users can post information, add comments, and browse activities and comments.

A. Posting

The posting flow of our system proceeds as follows:

1) The system presents location information around the current position and shows posted activities in the past (Figure 1). In Figure 1, the blue point shown in the center of the map is the current point obtained by the GPS function of a mobile phone. The red pins show the posted activities in the past.

Figure 1. Posted activities around the current point

2) By tapping the camera icon at the bottom of the screen, the user can take a picture around the current location.
3) The user can freely enter titles and comments about the picture, the current place, or anything else.
4) Tapping the "Submit" button uploads the above information to the server.
5) After uploading, a red pin is placed at the current location.

B. Commenting

Users can post additional photos and comments on the posted activities. In addition, particular locations and activities can be saved in a "Favorites" list. The commenting flow proceeds as follows.

1) By tapping a red pin, a user can see the details of the activity and then write comments about it (Figure 2).
2) Then by tapping the "Submit" button the user completes a comment submission.

Figure 2.   Details of an activity

C. Browsing

Browsing with our system involves five key functions:

1) Browsing for newest posted activities (posts).
2) Identifying the user's current position.
3) Browsing the posted activities.
4) Browsing the comments.
5) Browsing the favorites.

In the following, we give details about the above functions:

1) A user can browse the latest posts by tapping the button in the lower right of the screen. By tapping a "post," a user opens the details screen showing the post's comments and location information.

2) Tapping the compass-mark button shows the current location at the center of the screen. By tapping a red pin, the user can browse the details of the marked activity (Figure 3).

Figure 3.   Finding current location on the screen

3) If a user wants to view a post at some other location, he/she can pinch out the map and tap the area he/she wants to see. Then, by tapping a red pin, the user can see the information of the activity.
4) Users can see a list of posts from themselves and other users. If there are unread comments, they are displayed with "Unread" buttons.
5) A user can register particular posts as favorites by tapping the "Favorites" button. He/she can browse them in a list view of his/her favorites.

III. CONCLUSION

This extended abstract overviewed the implementation of a location-oriented information-sharing system. This application can support users in finding activities of nearby locations with simple operations. The posted activities are shared by the system's users. Accordingly, they can exchange comments, photos, and locations. This boosts real-world communication among users in social networks. Future work includes activity-mining functions, behavior-analysis functions, and learning functions of user activities.

REFERENCES

[1] Scott Counts and Karen E. Fisher, "Mobile social networking as information ground: A case study." Microsoft research, 2010 p. 98-115.