

MYGLOBE : Cognitive Map as Communication Media

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1 Introduction

MYGLOBE is an interactive map media which allows us to share our cognitive maps. This map grows up with our own activities and shows our subjective view of the city by emphasizing roads or landmarks frequently used. Users can bring up their own city in the device by actually walking in the city, and also share their own maps with each other and discover unknown places. Present map services such as Google maps and Google Earth, provide mash-up tools which allow us to create our own favorite place on the map easily. We can use hand held GPS devices to make our own travel route and navigate to destination places. *MYGLOBE* allows us to not only tag their favorite places on the map but also change the shape of the map itself. Instead of an accurate geographic map, *MYGLOBE* provides maps reflecting the user's individual experiments and the view of the city. It can also be used as a communication tool to share the life history with your friends. *MYGLOBE* will enhance your city experience.



Figure 1: *MYGLOBE*

2 Related Works

"Automatic Generation of Tourist Maps" [Grabler 2008] is a prior work about maps emphasizing landmarks and streets. The size accords to their scores evaluated by semantic information from websites. In contrast, *MYGLOBE* emphasizes important areas of user's subjective cognitions according to the user's own activity history. "Sphere: A Multi-Touch Interactive Spherical Display" is a prior work about an interactive spherical display prototype. *MYGLOBE* is not only a small sized spherical multi-touch display but also enables interaction, such as rolling within the hands and data communicating between the devices.

3 Implementations

MYGLOBE service consists of software for generating the cognitive map from user's location data history and hardware for displaying the map. The GPS in the *MYGLOBE* device attains the exact location data (longitude and latitude) of the user at fixed intervals and sends the data to the server. Routes you walk very often are indicated broadly. Routes you have walked only once are quite narrow. Landmarks you spent your time are expressed larger than usual. The user's territory assumed by his/her activity record will be shaped like islands. There are two versions of *MYGLOBE*, one as a base version for viewing the map and another as a mobile version for

"location-logging". Base version can be used to share all the friends' cognitive map together as for displaying many maps together at one time. Attached to the axis, there is a rotary-encoder which allows the displayed cognitive map to change as it turns. Mobile version is composed of spherical display with GPS, ZigBee, and 3D acceleration sensor inside. The mobile version's spherical display can project as a perfect sphere because of the omni-directional mirror placed inside the sphere. Users can share their cognitive maps with each other by having each other's *MYGLOBE* close together which communicates by ZigBee.

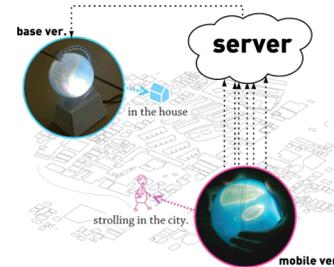


Figure 2: two versions

4 User Experience

The user goes out to city with mobile *MYGLOBE* which stores his/her activity record. With *MYGLOBE*, users can express his/her own world and individuality by generating their favorite landmarks or roads. Moreover, users can customize the favorites as is s/he brought the city up. The user can also look back on their own city and have a new understanding of it. This causes memories relating to the city to flash back, and become more memorable. User can share their favorite places by trading the landmarks with each other, like Pokemons. *MYGLOBE* shows places where you have never went before as blank like ancient maps. This causes pioneer spirit.

5 Future works / Conclusion

By using *MYGLOBE*, we can have communication with each other and find new faces to cities, and also develop social relationships based on locations. This applies new services focusing on personal point of view of the city. For example, this could make tourist maps as keeping track of the vacation memory. *MYGLOBE* remembering activities of the vacation would become the best souvenir ever.

Acknowledgment

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Reference

- [1]Automatic Generation of Tourist Maps
Floraine Grabler, Maneesh Agrawala, Robert W. Sumner, Mark Pauly SIGGRAPH 2008
- [2]Sphere: A Multi-Touch Interactive Spherical Display
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