

Fleeting Social Ties

Statement of Concept

Today's digital population wants to be on-the-move and stay connected. Social context plays an important role in a society burdened by information overflow. GPS co-ordinates are readily available and can be used to find an individual's sense of place, the social space inhabited and an omnipresent communication link to close social and locative networks. In this project, context information in the form of GPS co-ordinates will be captured by extracting place data and utilizing this data to create new social and interactive ties to the nearby surroundings. Thus by combining the environment with location, we alleviate the participant's sense of isolation - keeping old contacts in the vicinity and meanwhile bridging the gap to encourage new contacts, social fleeting ties and context data.

Contribution and Benefits

Current social software utilizing location metadata are currently one-way flows of information e.g. Twitter. Participants reveal what they are currently doing but there is no interaction among the participants. Similarly, other services such as Flickr allow photo uploads with optional geotags but the data is largely unmanaged and fairly difficult to get auto-location updates. This project proposes to bring these services (Flickr, Twitter, Wikipedia, etc.) together as factual data and also to provide an interactive means of communication with others about this data using the context of location derived from a GPS device. No interface today collectively ties these services together to enhance the communication experience for the participant.

Prior Work Analysis

In comMotion [1], participants are tracked using GPS and they identify important destinations that are most relevant to their lives such as Home, Grandma's house and Work. Locations are learned by the system and created by the user in an incremental and adaptive manner. Based on these learned locations, reminders, to-do lists, e-mails and web content are delivered based on their specific location, date and time. Routes are also developed to help predict user's destination where comMotion suggests alternative routes for getting other activities done while ending at the same destination. However, in my project, no user input will be required to seed the application and neither will location data be stored to predict or sync user's calendars or routes. The goal of

my project is to provide a sense of community in new surroundings while at the same time maintaining old contacts. No tracking of personal data is proposed here.

Urban Tapestries [2] creates an interactive personal history trail based on location-specific multimedia such as local history information, personal pictures, movies and sound clips. Location-content threads are uploaded to the system and used to create an organic archive of a community's memory and history. This collective data thus enhances social knowledge to enrich the local environment. Application examples include tourist information, local library, school or museum. GPS or GPRS embedded in mobile phones or public wireless hotspots are used to get location data. Participants access and publish to the system by creating social threads which are placed above a 2D map of street names. Urban Tapestries focused on public authoring where participants created personal threads and history which can be accessed by others in the community. My project also intends to have an interactive element of authoring but will not save tracking data to create personal history trails. Instead, the location tracking will be fleeting and used only to provide affordances to communicate with others in real time. The information presented will be based on more factual data rather than personal logs. Factual data includes Wiki articles, Flickr photos of nearby locations and some personal experience data to give the participant a sense of place and current "to-do" events nearby based on Twitter. Unlike Urban Tapestries, the data is not collected into history threads so that the threads can be revisited. The data in my application is relevant in real time and is fleeting; content changes with time and cannot be retrieved in exactly the same way twice when the application is revisited later.

Count et al [3] created a social networking system allowing event attendees to digitally link to one another based on their convergence to an event in one location. A web based e-mail prototype called Trace was built to enable people to make connections during ad hoc social events. By linking virtual and physical networking, the authors hoped that participants will follow up with their new contacts. Participants received an e-mail with links and profiles to all other event attendees. Its value and usage was tested to determine the extent and ways people would make use of this system. 17 of 66 participants responded to questionnaires and 6 were able to find new contacts. Even less participants felt connected to other people at the events and suggestions included making profiles available before and after events. Count's paper focused on creating new friendship through mutual events. The goal of my project is not to create lasting contacts but rather to use location-based data to link people to a shared knowledge of local happenings. The interaction is intended to be transitory, less invasive but useful and is based on event facts or personal suggestions about local happenings or places in real time.

A location-based annotation system was built by Tungare et al [4] to let people post and read other's notes at any location. Its goals were similar to the concept of post-it notes on office doors or desks that serve as self reminders or messages to others. However, remote authoring and remote access was also provided to allow users to get messages from one location while they were at another location. Location was used more as metadata or as a placeholder and was not the subject of interest in the message. My project has key differences in that the information

displayed is about the current location where location is the subject matter. The information is created for other people interested in that location and authored by others currently at that location.

Weal et al [5] described an investigation into creating an in-situ authoring application to create a novel visitor experience to a historic library of early women's literature. Digital tour guides are authored by domain experts but does not include stakeholders, curators or visitors and become quickly outdated. A field trip of children aged 10-11 were observed exploring the grounds of a historic house and authoring stories to create a location aware literary experience. These experiences informed the design of an in-situ authoring tool for revisiting, editing, refining and reorganizing the authored content. So instead of having just a curator's guided tour of the grounds, the tour was now split into separate clips, each clip authored by both visitors and other curators, all who had different approaches to describing the grounds. My project does involve in-situ authoring; however the content is neither saved nor reused for recreating those experiences. Instead the interaction is short-lived, useful and relevant only for that period of time the data is pulled.

Evaluation Plan

An initial lightweight qualitative study will be performed using the software prototype to determine whether participants are able to feel connected to their surroundings. The following questions will be asked:

1. How do you stay connected to local events happening around you?
2. What are your sources to find out what's happening around you?
3. How often do you like to keep in touch with your friends and loved ones?
4. How do you do this? Phone calls, texting, IMs
5. Do you have long distance friends?
6. How interested are you in finding out what your friends or others in your community are doing and where they are?
7. Do you wonder about what others in the world are doing (foreign to your daily activities)? Would you be interested in knowing about other people and cultures in the world? Not necessarily creating new lasting friendships but getting to know about their culture and what they do for fun.
8. What else would you want to learn from them?
9. Do you use GPS devices such as Navigator, GPS capability of mobile phones?
10. Would you consent to reveal factual data about places, experiences, events based on your current location? This location data will not be used to track you but rather provide location context for the information you provide.

Regarding the software prototype:

11. What do you like/dislike about the information displayed?
12. What additional data would you like to see?
13. What data is missing?
14. Is the value of the data worth revealing your GPS location? Why or why not?

After iterative improvements to the initial software prototype are made, a second usability study will be conducted to further highlight issues and other suggestions. This study is dependent on the results of the first study.

Project Plan

This project will be implemented using NASA's Worldwind SDK implemented in Java, a GPS receiver and a portable laptop. 3D GPS maps will be cached by the system to allow the application to continue to run while the user is roaming. First steps include a study of the existing interface which uses current GPS co-ordinates to load location-based tweets and Wikipedia articles near that location. Next, other valuable information based on user studies will be added along with interactive capabilities for participants to connect with the data and other people close by.

References

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