Fleeting Social Ties

[Proposed Venue: Mobile HCI]

Abstract

Fleeting Social Ties addresses the need for real time location-based services for gaining a local's perspective about a particular city. Tourist guides are often clichéd and do not address the genuine business traveler's or vacationer's desire to experience local and authentic culture as individuals native to that location. This application seeks to bridge this gap by creating social fleeting ties with locals in a particular city to create a genuine communication experience.

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 form the basis for creating new social and interactive ties to the world. Thus by combining the environment with location, we alleviate the participant's sense of isolation, keeping old and familiar locations in the vicinity and meanwhile bridging the gap to encourage new social fleeting ties and context data in other strange locations.

Scenario

Business travelers or vacationers make frequent visits around the world to either explore leisurely or for work. Consider the busy work traveler, who is constantly on the move around major cities and visits foreign places regularly but never really has the time to *see* her surroundings. She may get one afternoon prior to her business work week to spend time getting to know the strange city. However, she has no time to view all the tourist attractions or get the cliché tour guides of the city. She wants to get the quick highlights and genuine traditions from the "locals" while spending her short free time in the foreign city. She may be interested in finding the best local restaurants around town, the must-see authentic architectures, the best hotels and the best area to stay in but from a local's perspective. She may want to use Wikipedia, Flickr, Wondir, Yahoo Answers, Wiki Ref Desk or Twitter to find out this information from other locals in that area to prepare for her short hiatus before the busy work week.

She logs into the Fleeting Social Ties application once she arrives at her destination. If she chooses to enable her GPS receiver, she immediately initializes the application with her location's data. However, this location data is not stored to track her or used in any way to reveal her location to others. Based on her location, the application gets the nearby cities and what services are available for her to explore the new surroundings. She quickly gathers her sense of place in the foreign city. As she navigates the 3D map, she selects a nearby city of interest and the application brings further location information about nearby places using Wikipedia, local photos from Flickr taken by actual visitors or people living in that area and lastly, a Twitter view of what people nearby are doing in that area. She gathers a real-time view of what's going on in her surroundings and can quickly understand a sense of what's happening in this community.

Having explored the immediate surroundings, she becomes interested in other towns of interest nearby. For instance, if her business meeting is located in Newark NJ, she may be keen on visiting NYC which is only a 20 minute commute via subway. She clicks on the NYC location and is quickly able to get factual data from Wikipedia about the major highlights of this city, a Flickr view of recent photos taken by others in the city and a Twitter view to provide a sense of what's happening in the city and what others are doing there. Based on the real-time data provided, she gets an honest perspective of the city and has supplemented her knowledge beyond what a tourist guide can provide. She may also directly interact with other locals in the vicinity or browse other recent chats or events posted by other locals to find answers to the best authentic cuisine and must-see events occurring at that instant in time. The communication she creates with other locals is fleeting and is only relevant in real time. Her interaction is unique and cannot be recreated even if she revisits the same location again in the next hour. She is able to get a real sense of what's happening around the city from a local's perspective.

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. In addition, the information provided is presented in real time with no history trail and no archiving of data. The interactions created at any instant in time cannot be recreated even at the same location. Past research has focused on tracking location metadata from the individual to better inform, suggest or manage an individual's schedule, time or activities. This project does not store any location data, history trails or personal information. Instead, the application is designed to create informal

social fleeting ties with locals in the area to better inform an individual about real time happenings in a city.

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 to determine how participants stay connected to their surroundings and feel a sense of place in a strange city. The following questions will be asked:

1. How often do you go to a foreign city?
2. Do you visit for leisure or for work?
3. Do you research the city you are visiting before you arrive?
4. Where do you research the city? What information sources do you use?
5. How do you stay connected to local events happening around you? What are your sources to find out what's happening around you?
6. Do you use services such as Twitter, Jaiku, Wikipedia or Flickr?
7. What other services do you use?
8. How interested are you in finding out what others are doing in the nearby community where you plan to visit?
9. 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.
10. What else would you want to learn from them?
11. Do you use GPS devices such as Navigator, GPS capability of mobile phones?
12. 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.

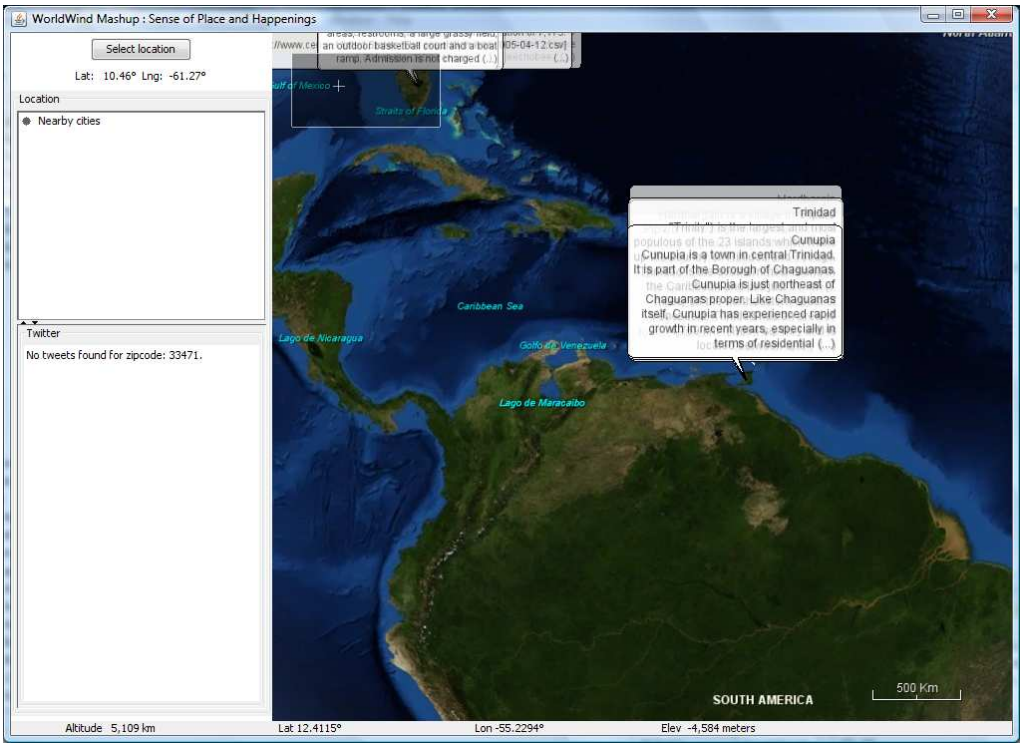
The findings of this preliminary study will be used to inform the design of the software prototype. Services used by the above participants will determine what information will be displayed to help individuals feel a sense of place and a sense for what's happening in the foreign city.

A second usability study will be conducted to evaluate the software prototype. The purpose of this study is to determine whether the real time interactions afforded by this interface actually provide useful insights for the business traveler or vacationer. In addition, the interface will be evaluated for its ability to bring the "local" perspective to a foreign city. To gauge a qualitative experience, this study will employ a think-aloud protocol, in which an active conversation with the participant provides us with some sense of what thoughts and creative fleeting social ties are formulated by the participant.

Participants will be given a specific task to complete. The participant will be asked to select a foreign destination of choice – a location that has never been visited before by the

participant. This task designed to give the user a qualitative experience interacting with a foreign city. The participant explores the city using the two interfaces below to perform the task:

1. Web browser for the participant to find any information about that foreign city e.g. by using search engines such as Google, Yahoo, etc.
2. Fleeting Social Ties application where the participant can browse using a 3D map interface and select a foreign location on the map. See figure below.



Fleeting Social Ties Application

Approximately 6 participants will perform both steps 1 and 2 above. The first set of 3 participants will perform steps 1 and 2 in that order whereas the second set of 3 participants will perform steps 2 and then 1 in that order. This sequencing reduces the bias of ordering effects with the introduction of the new interface. Participants will be given a brief overview of how each interface works to acquaint users with the respective tools and the specific task will be administered. During the task, participants will engage in a think-aloud protocol. The investigator will take notes during the task to have a permanent record of the scope of the city that the participant explored. After the task is completed, a post-task interview will be issued to find out specific details about the experience and feedback about the task. The following questions will be asked to evaluate the software prototype:

1. Which interface did you like better?

2. What did you like about it?
3. What additional information was provided in your chosen interface that was not provided in the other interface?
4. What do you like/dislike about the information displayed in your chosen interface?
5. What additional data would you have liked to see that's missing?
6. Is the value of the data worth turning on your GPS device? Why or why not?

Each participant should complete the tasks including the interviews and quick tutorial in approximately ½ hour though no serious time restrictions will be imposed on the tasks for any of the participants (see Table 1).

Events	Estimated Time/minutes
Tutorial	3
Specific task: (see above)	20
Post-evaluation interview	7

Table 1: Events and Time to complete events

Evaluation Measures

Data collection will consist of qualitative data written notes and the subjective perspectives of the participants. The qualitative experience will consist of written notes taken by the investigator during the participant's think-aloud thoughts and the post-task interview.

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 an implementation of the interface to use 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. A screenshot of the initial prototype is shown in the figure below.

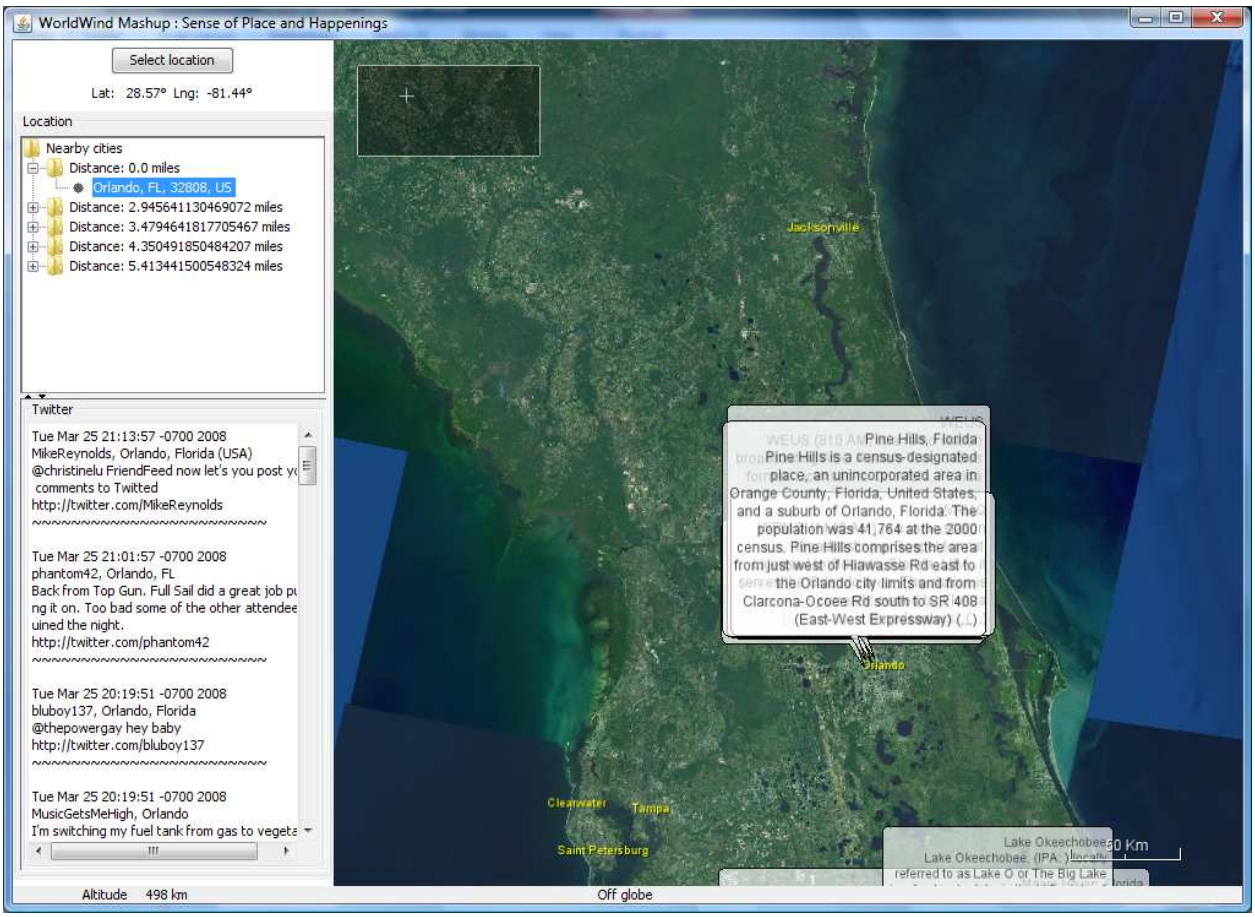


Figure 1: Prototype screenshot showing Orlando, FL along with Wikipedia facts, nearby cities and Tweets.

References

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