
Where We Twitter

Samuel J. Kaufman

Donald Bren School of Information
and Computer Sciences
University of California, Irvine
Irvine, CA 92697-3440, USA
kaufmans@uci.edu

Judy Chen

Donald Bren School of Information
and Computer Sciences
University of California, Irvine
Irvine, CA 92697-3440, USA
judychen@ics.uci.edu

Introduction

Microblogging is a relatively new phenomenon that has become explosively popular as a means for broadcasting and exchanging quick, frequent messages. According to a memo released by the Pew Research Center, 11% of online American adults used services that allowed them to communicate updates about themselves and read those shared by others as of December 2008 [4]. One of the most popular of these microblogging tools is Twitter, where people post short messages consisting of no more than 140 characters, often referred to as “tweets,” using their computers or mobile devices [6]. Twitter’s open development platform also allows outside developers to build add-on applications to expand the service’s functionality beyond a simple lightweight communication channel. Yet, despite its potential to do much more, most of the research on microblogging and Twitter, in particular, has focused on its impact on informal communication. The work we have begun, however, aims to explore other potential uses of Twitter, particularly as a tool for capturing comprehensive locality information. Prior work has documented the use of Twitter for a variety of social purposes, especially keeping in touch, raising visibility of things of potential interest to one’s social networks and seeking advice and opinions [9].

Related Work

Twitter is also accessible across a multitude of devices and platforms, enabling flexible access. The low overhead of posting and reading tweets on Twitter lends itself to frequent brief updates about one's daily activities, often as they happen in real time. Most recently, Twitter released a feature that allows Twitter client software, especially those on mobile phones, to tag tweets with GPS information. Announced less than two months ago as of the time of this writing, a substantial minority of users are already taking advantage of this feature by posting public, geotagged tweets. Others have made these data accessible via visualizations— most commonly, by plotting tweets on world maps [5][7].

The ubiquity of digital networks has enabled people to produce and consume information about local spaces wherever they are. Because of the vast amount of user-generated content on the Internet, coupled with its global reach, there is considerable motivation to attach spatial context. Geotagging applications, mapping applications and location-based information services, then, become the interfaces between the Internet and the local through which people interact and explore. Gordon refers to this experience of interacting with located information within the perceived global reach of communication as "network locality" [3].

There is, however, a distinction between located information and local knowledge. According to [1], local knowledge is the commonly held understanding of the customs and information shared by a group of people with a shared interest in a particular space. Local knowledge is inherently social, whereas located information is the product of machine intelligence and

user designations. How is local knowledge produced within the context of located information? How do geolocative and location-based services change the ways in which people interact with public spaces and with each other in those spaces?

Design Objectives

Users who enter new spaces, especially urban spaces, naturally explore. Increasingly, exploration is augmented by mobile, digital information systems such as mobile phone versions of Google Maps [2] or Yelp [8]. These systems may provide statistics, logistical information, and service reviews written for a general audience, but do not typically inform the user about the personalities of space occupants (the character and culture of a space), recent happenings and other kinds of local knowledge.

Presenting useful information about the former requires something different than a simple query against the Twitter public timeline. It is likely that any set of tweets for a given length of time from Twitter at large will be dominated by a few noisy voices. A newcomer to a space could better understand the character of that space with a collection of messages more representative of the city's diverse activities, demographics, opinions, habits, etc.

The Concept

The system described herein hopes to do just that— provide a novel method for the "colorful" understanding of places, drawing from newly-available corpora of geotagged tweets. This system offers two modes for viewing tweets currently local to a mobile device: "Explore City" and "Explore Space."

The former mode returns a fixed number of tweets from within the city over the past several months, with the number of tweets per author normalized by hiding tweets from individual authors in proportion to that author's prolificness. "Explore Space," on the other hand, returns a simple, live-updating feed of all tweets broadcast within 30 meters for all time.

Motivating Scenarios

Gillian Uses "Explore City"

Gillian doesn't know much about Los Angeles, but finds herself in the city a few hours before she expects to meet a friend with nothing to do and no goals in particular. She pulls out her mobile phone and activates the "Explore City" mode of this system.

After skimming some tweets she doesn't find informative or interesting—"Getting lunch with Jim" or "I'm at Boardner's (999 Cherokee Ave, Hollywood) <http://4sq.com/99>"—Gillian finds a few that pique her interest:

- About to taste my first Umami burger. Will I regret this?
- Watching Avatar at the ArcLight Dome Theater!
- At the Hollywood Farmers Market. Must be careful to not get any hipster on me.¹

A potentially regrettable food of which Gillian's never heard? A dome theater? Hipsters? All things that seem worth a look to our protagonist, and all things that

¹ These are actual, anonymized tweets tagged with locations in the West Hollywood and Silver Lake areas.

Gillian is unlikely to find with a textual query against Google Maps or Yelp.

Our system, instead, returns results based solely on current location and system mode ("city"/"space"), and then hides tweets from individual authors in proportion to prolificness. The results are noisy, but are more likely to surface those place or events that more people find remarkable enough to tweet about, along with personal, informal commentary. In this case, Gillian found the ArcLight Theater and Umami Burger, two Los Angeles highlights, as well as a more vaguely defined place, the Farmers Market, which piqued her interest only when coupled with cultural commentary about "hipsters."

Alex Uses "Explore Space"

Alex is entertaining some friends who are visiting Los Angeles for the first time. Her friends are big music-lovers, so she had planned on taking them to Rockaway Records before heading over to another friend's house for a party. When they arrive at Rockaway, they realize that it is closed early for inventory. It's a nice night out but too early to head over to the party so they decide to walk around. Alex wonders what other people in the area are up to and pulls out her mobile phone, activating the "Explore Space" mode. The first few tweets indicate that there is a café nearby:

- I'm at Intelligentsia Coffee <http://gowal.la/s/7XU>
- I'm at Intelligentsia Coffee in Silverlake. Are you?¹

The group decides to grab some drinks and continues walking down Sunset Blvd. As they walk, Alex sees some tweets about Dusty's, a popular bistro, and then

begins to notice a lot of tweets about a band called the Steelwells playing nearby.

- Heading over to the Silverlake Lounge in a few to see @thesteelwells
- first time at Silverlake Lounge! yeah i actually drove. Now is The Color Turning...next is The Living Suns! but we're all hear 4 Steelwells
- Hope to see everyone tonight! @ silverlake lounge w/ living suns, the steelwells, color turning, and more. Free/21+/9pm. We Play at 11

Alex and her friends are interested in seeing what all the buzz about this band is about, especially when they read that the concert is free. They turn the corner and see a line already forming outside the venue and decide to join.

Conclusion

We are currently in the early stages of designing and deploying Explore City and Explore Space. In our evaluation, we are examining how people articulate spaces and places in their tweets, how they explore and

interact with localized information and what kinds of interactions take place around such information.

References

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