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# Towards Storytelling with Geotagged Photos on a Multitouch Display

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**Abstract**

We describe a prototype system for displaying geotagged, compass-oriented photos on a multitouch display and propose user studies to evaluate its utility in storytelling.

**Keywords**

Storytelling, geotagging, multitouch

**ACM Classification Keywords**

H5.2. User Interfaces: Interaction styles.

**Introduction**

In storytelling, a picture is worth a thousand words. We hypothesize that combining three commercially available technologies will make storytelling with digital photos a rich experience for storyteller and audience:

- *Virtual globes* display photos in immersive context. Storytellers can refer to maps and others' photos.
- *Geotags* allow placing photos on virtual globes. We expect that displaying photos using compass orientation will enhance the immersive experience.
- *Multitouch displays* allow natural manipulation of photographs, tags, and virtual globes.

**Prototype System and Planned User Studies**

In our prototype system, photos with GPS coordinates are captured on a mobile phone. Compass orientation is

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added manually in the lab. The photos are displayed using Google Earth (see figure 1). We are finalizing a custom mobile phone application to capture geotagged photos, including compass orientation. For storytelling, photos are displayed on a TouchKit multitouch table<sup>1</sup>. The table allows using two hands to manipulate the virtual globe and photos (see figure 2).

We are planning a 2x2x2 study with the following independent variables: *Display* (virtual globe or slideshow), *Compass Orientation* (yes, no) and *Interaction* (multitouch or single-touch). The familiar slideshow is included as the baseline. Dependent variables will include objective measures such as length of time used to tell a story, subjective evaluations by storytellers and audience, and interview data.



**figure 1.** Capturing (left) and displaying photo in Google Earth at the correct GPS coordinates and compass orientation (right).

Component technologies of our system have been explored by many researchers. Simon and Fröhlich used an orientation-aware mobile device to improve location based services [3]. Fujita and Arikawa

<sup>1</sup> [www.tinyurl.com/p54touch1](http://www.tinyurl.com/p54touch1)

augmented photo slideshows with arrows on a map representing location and orientation of the photos [2]. Apted et al. studied the usage of a multitouch surface for photo sharing [1]. However, based on our literature review we are the first to explore how the combination of the three technologies can improve storytelling. We believe that this combination will provide one of the killer apps for multitouch displays both in the consumer marketplace as well as in specialized applications such as law enforcement.



**figure 2.** Manipulating photos on the multitouch table.

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