mytigr.net: A Web-Based Tool for Creating and Sharing Geotemporal Multimedia Reports

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ABSTRACT

We will demonstrate mytigr.net, a web-based application for creating and sharing reports organized around geo-located pictures, audio, and video. Mytigr.net is a *Web 2.0* spin-off of DARPA's TiGRNET (Tactical Ground Reporting Network) reporting application, which supports soldier-to-soldier sharing of multimedia collected on patrols. Our ultimate goal is to create an open prototype, toolkit and API to allow other user communities to rapidly build flexible, web-based versions of the TiGRNET concept for their own needs – communities such as emergency response, law enforcement, or public health.

Categories and Subject Descriptors

H.3.5 [**Information Storage and Retrieval**]: Online Information Services – *web-based services.* H.2.8 [**Database Management**]: Database Applications – *spatial databases and GIS.* H.5.1 [**Information Interfaces and Presentation**]: Multimedia Information Systems – *video.*

General Terms

Design, Human Factors

Keywords

Geospatial Video, Social Systems, Flash, DHTML, Interaction Design.

1. INTRODUCTION

DARPA's *Advanced Soldier Sensor Information System and Technology* (ASSIST) program is developing technologies to enhance soldiers' ability to collect, process, retrieve, and share tactical information, with a large focus on photos, audio, and video. While ASSIST researchers are exploring advanced techniques such as object, activity, and facial recognition to help soldiers organize and understand the media they collect on patrols, as a first step they are also developing tools to help organize and understand collected media based around maps. These tools include cameras with a built-in GPS and digital compass, and a reporting application called TiGRNET (Tactical Ground Reporting Network) that soldiers can use to create and share *After Action Reports* from their collected media.

To investigate additional use concepts, we are developing a spin-off of TiGRNET called *mytigr.net*, a web-based version built around Google Maps [1] and Google Earth [2]. Our ultimate goal is to create an open prototype, toolkit and API to allow other user communities to rapidly build flexible, web-based versions of the TiGRNET concept for their own needs – communities such as emergency response, law enforcement, or public health.

2. THE DEMONSTRATION

Our system demonstration of will focus first on the process of a soldier using mytigr.net to create a report from a **video** of a recent patrol. For initial experiments, we have been wearing a head-mounted video camera and separate GPS receiver during daily activities. Key use scenarios are: uploading videos and GPS tracks, correcting spurious track points, synchronizing the video with the track, video and track playback, selecting pertinent sections of the video (frames or clips) to add to the report, and annotating interesting portions of those sections.

The second part of the demonstration will show how someone else might find that report and interact with it to look for interesting information. They might see the report by browsing a particular area of the map. They might find the report by searching along a particular route. While viewing the report, they might want to add their own annotations to the video.

We are focusing particularly on video for our demonstration because there has not been much prior study of interacting with geo-located video, especially in a web-based environment.

2.1 The System

We are exploring two concepts for mytigr.net: one built around the Google Maps API, and a second built on Google Earth.

The Google Maps version is a custom web application built with PHP/JavaScript/MySQL.   We are converting and serving video through a Flash video player because Flash is already enabled in

most web browsers, and it allows us to embed additional controls and interaction into the video itself.

The Google Earth version uses the unpublished Google Earth COM API and an embedded version of Microsoft's Windows Media Player to synchronize geovideo playback between Google Earth and Media Player. The user is able to control the state of play via either the Google Earth or the Media player interface.

3. BACKGROUND AND RELATED WORK

With the release of Google Maps and Google Earth and their respective APIs, there has been a surge of activity to publish personal, geo-located content on the web. However, most of this activity centers around static content – text annotations or pictures – and not fine-grained tracking of dynamic content like wearable video or audio. Red Hen Systems makes a stand-alone system called MediaMapper [3] that will synchronize videos to maps, but it's a relatively expensive, proprietary solution, making it inaccessible to many potential users. Furthermore, MediaMapper doesn't support the social effects like sharing, tagging, and commenting that are seen in current web-based systems.

We believe it's important to press the concept of a well-designed web-based system for mytigr.net in order to foster these same kinds of social effects for report sharing. A primary issue with knowledge management systems is actually encouraging users to enter information into the system, and the popularity and community of sites like Flickr [4] for photo sharing or YouTube [5] for video sharing are good examples of systems that encourage sharing and browsing. Instead of focusing on building another full-featured GIS system, we've focused on building a platform that will also encourage social interactions and compelling exploration.

4. ACKNOWLEDGMENTS

5. REFERENCES

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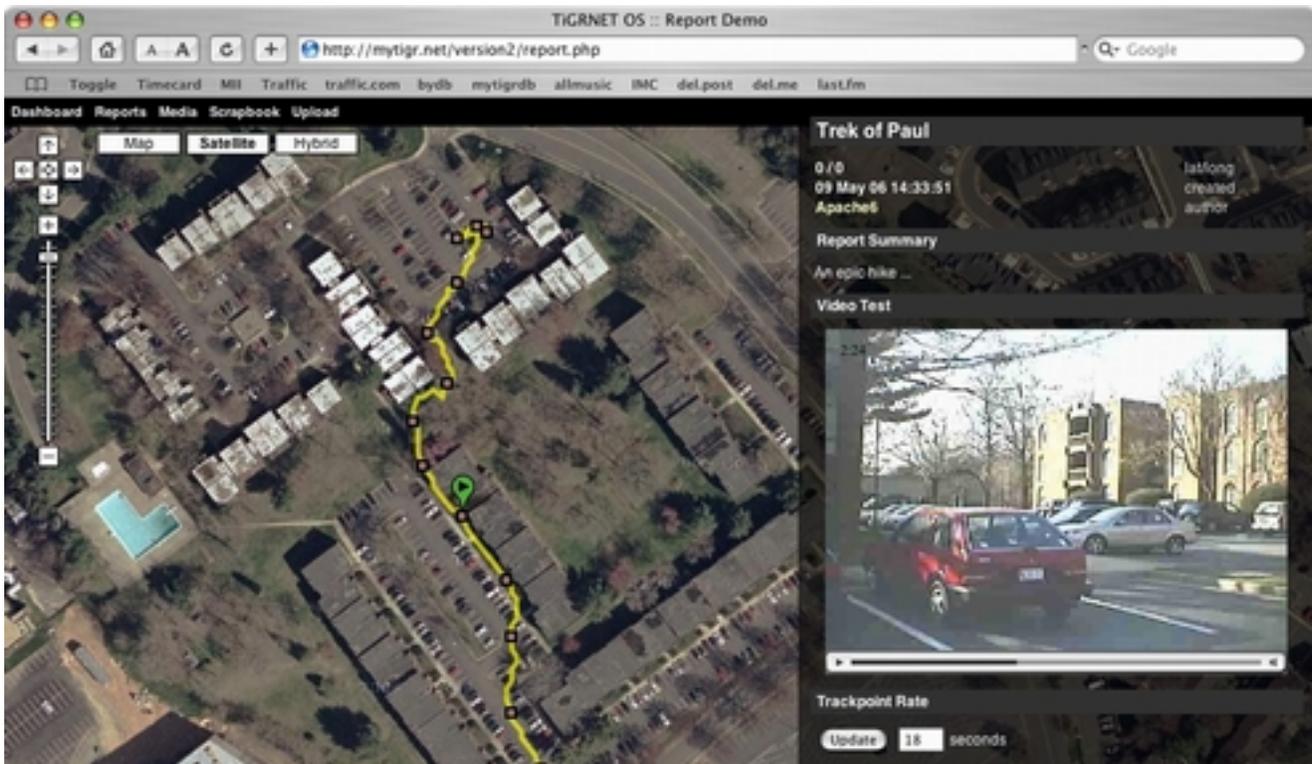
[5] YouTube. http://www.youtube.com

Figure 1. A sample video-based report in the Google Maps version of mytigr.net. The location marker is synchronized to the video playback. The video can also be controlled by clicking on a track point in the map.