

Geotagging photographs - New ways to organise and share photographs

The idea of adding geographical references to photographs is as old as photography itself. Geographical references can be found in all old photo albums, where photographs are subtitled with the name of the location where the photograph was taken. But recent technical progress makes this process much easier and also allows complete new ways of displaying geographical information. There are three main trends:

1. Photo-sharing sites and software with digital map and satellite picture support

In summer 2005 Google Earth made available high quality satellite and aerial pictures for free. This is a milestone in history of geography, because those satellite and aerial pictures allow a much more accurate visualisation of geographical information than traditional maps. But there is one thing missing: satellite and aerial pictures are taken from top and only allow vertical views (e.g. roof tops). So the horizontal view is missing (e.g. house front). Immediately after the launch of Google Earth, users started geotagging photographs and displayed them in Google Earth. After Google Earth a whole bunch of similar products followed, like Google Maps, Yahoo Maps, Microsoft Live etc. All these products have an API that allows users to create Mash-Ups which display user generated content like photographs on satellite pictures. Digital maps and aerial/satellite pictures are also used by photo-sharing sites for geotagged photographs like locr.com.

So more and more users are visualizing the geographical position of photographs with the help of satellite pictures and digital maps.

There are two ways to geotag photographs: manually (e.g. drag and drop on the relevant position on a map) or automatically by GPS. The later method is described in the next two points.

2. Mobile devices with integrated GPS and camera

GPS receivers have become smaller, cheaper, less power consuming and are now integrated in many mobile devices.¹ There are two reasons for that: In some countries legal regulations require operators to integrate GPS for automatic emergency call localisation (USA, Japan). These regulations are also expected in Europe with the launch of Galileo in 2010. The second reason for integrating GPS are LBS like street navigation. LBS are already very popular in the US and Japan. But all major mobile devices manufacturers are starting to sell GSM Smartphones with integrated GPS in Europe in 2007 as well.

The combination of GPS, digital camera and the appropriate software (locr client software) allows automatically geotagging photographs. Unlike standalone digital cameras, mobile devices allow 2-way communication. So users can immediately upload photographs to internet communities and share them with friends and family. Automatically adding geographical information to photographs also helps to automatically generate appropriate descriptions based on Wikipedia etc. This offers a clear advantage to traditional MMS without appropriate descriptions.

Sharing geotagged photographs is expected to be one of the most important future LBS services.

3. Standalone digital cameras

Digital cameras have replaced analogue cameras. Now users don't need to spend money for paper copies any more, they can store photographs on their desktop. The result is a complete change of the way people take photographs, now they take a lot more photographs. The number of photographs taken worldwide is estimated to be more than 500 billion per year. Many users already have more than 10,000 photographs on their PCs and they are losing control over these huge collections. So there is a strong need for methods to organize photographs automatically. The location where a photograph was taken is one of the key criteria for organizing photographs.

Companies like Sony saw this demand and are now offering datalogger GPS receivers that allow to geotag photographs with any standard digital camera. Other companies started to add direct GPS support to cameras or they even integrate GPS.

So GPS is also becoming more and more important in the digital camera market.

Author: Malte Schloen, CEO locr GmbH, m.schloen@locr.com, December 2006

¹ http://www.gartner.com/DisplayDocument?doc_cd=144746