# Tracing the Visitor's Eye

The analysis of the accumulated archives of people-generated spatio-temporal data can derive high-level human behavior information valuable to urban planners, traffic engineers, and tourism authorities. In Tracing the Visitor's Eye we collect and visualize the history of physical presence of tourists from the digital footprints they publicly make available on the world-wide web.

Process

The process of recording and collecting the data takes place as follow. First, tourists take photos during their trips and journeys. Later, they manually associated a position to the photos through a map interface in Flickr or other external map-based services. A minority of tech-savvy users has their photos implicitly annotated with a position extracted from data collected by GPS devices embedded or external to the camera Finally, we retrieve via the Flickr API, the coordinates, time stamp, accuracy level, and an obfuscated identifier of the owner of the publicly available photos in a given area.
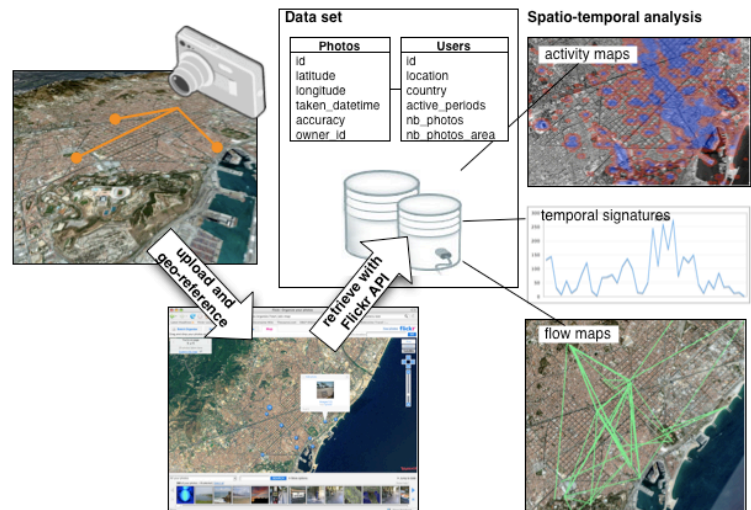

Tourist activity

The collected data allow an overview at very different scales. Our early results reveal a zoomable map of the overall tourist activity covering the northern part of central Italy including a part of the Tuscany region, the city of Florence and around the famous Ponte Vecchio.

a. Northern part of central Italy
b. Province of Florence
c. City center of Florence
d. Ponte Vecchio bridge
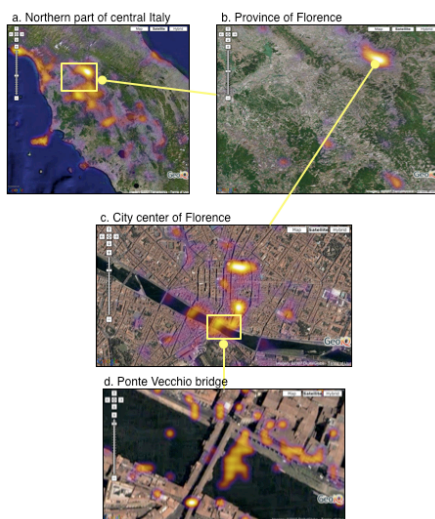
Traces

We can trace the users of Flickr from the digital footprints forming they leave along their path. Practically, a trace consists in a chronologically ordered set of geographically referenced photos taken by one person over the course of one day. Aggregating these personal traces reveal the travel behaviors of specific types of visitors. For instance, the figure below on the left reveals that Americans follow a specific graph constituted by the nodes of Florence, Siena, Pisa, Genova and Perugia. By contrast, Italians (figure below on the right) are more adventurous in their exploration of the area (including reporting on visits of the Island of Elba).
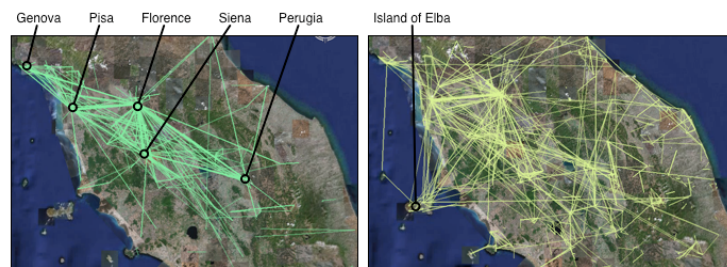
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