Geographic Information from Social Network Sites

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Introduction and Goal

- There is an increase in usage of Social Network Sites in terms of number of members and time spent. According to Pew Internet and American Life project, 65% of adult internet users use SNSs in USA.
- Increasing number of researchers from various disciplines are studying the SNSs to explore with different perspectives.
- As a Geographer, my interest is to explore if SNSs contribute any significant geographical information.
- Goal is to harvest geographical information from SNSs.
Geo awareness in SNS
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What information can be extracted

- SNS save locations of photos, events, updates
- This study focuses on photographs on Flickr
- All the details about the photo provided by the user can be extracted
- From photos we can explore places of interests like boating or fishing locations, or look for where a plant or animal can be seen …

Boating locations ~ 2250 photos

Fishing locations ~ 4750 photos
Extracting data from SNS

- Most of the SNS provide us with APIs
- The API results are returned in XML or JSON
- Parse the results into .CSV to use with GIS software

```
http://api.flickr.com/services/rest/?method=flickr.photos.search&
api_key=7e821c3288da47d4585889fbd53b0bca
&text=Danaus+plexippus&extras=geo%2Curl_o%2Cdate_taken&format=rest
&auth_token=72157628004133943-c725d8fe25d4b8b9
&api_sig=35e904b393c4d3baa9535a5a05c78420
```
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Plotting it on the map

The *Monarch butterfly* (Danaus plexippus)

To show the seasonality points are color-coded based on the quarter of the year it was recorded.
Plotting it on the map

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Exporting it to KML

- To give interactivity and to explore the data in detail, let us map it on an interactive platform like Google Earth.
- The location data extracted from Flickr was exported to KML using maptools and rgdal packages.
Tools and Technologies

SNSs
- flickr
- Picasa
- Panoramio
- facebook
- google+

Formats
- JSON
- XML

Tools
- R
- php
- python

Visualization
- Google Earth
- Google Maps
- ArcGIS
Conclusions and Future

- Social Networks have mostly untapped potential to provide some interesting geographical information.
- Tools like R could be used to extract and visualize “quick and dirty” maps.
- Next steps are to extract data from other SNSs like Picasa, Panoramio, Facebook and Google+ and analyze / visualize it in more meaningful ways.
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