Using the Twitter Geomap Application

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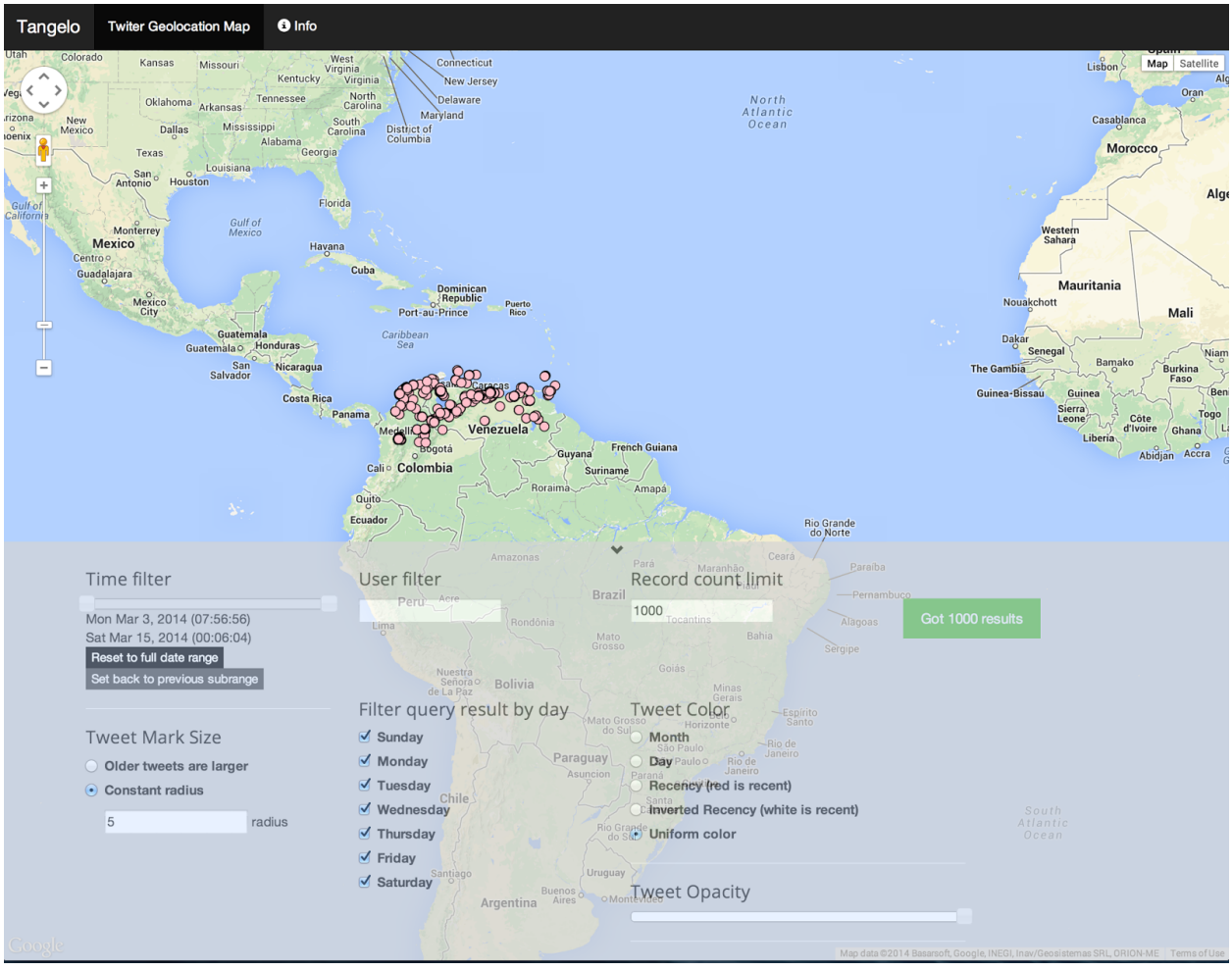
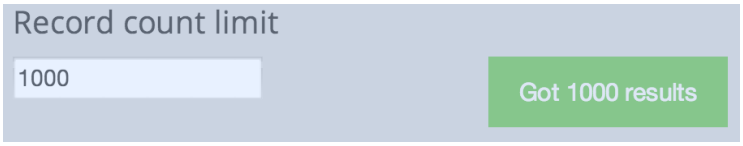
This application is currently hosted at the following URL: http://10.1.98.108:8080/twitter-geomap-instrumented/. Upon opening the page in your browser, you should see a Google map with a custom configuration panel as shown below.

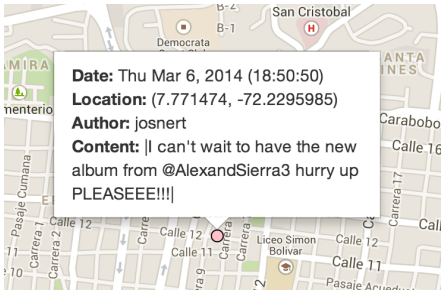


You can hide this panel to focus on the map by clicking on the arrow  at the top of the panel. You can navigate the map just as you would interact with a normal Google map. For example, clicking and dragging the mouse will pan the map while using the mouse wheel will zoom in and out.



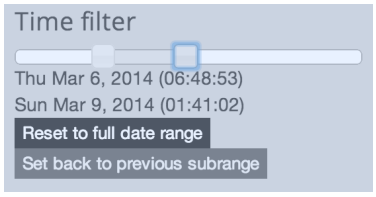
By default, the number of Tweets displayed is limited to 1000. You can change this by entering a new value into the “Record count limit” field. The box to the right will change change to red indicating a query is in progress. For large limits, this query may take a very long time. You can click on the red box to cancel the query at any time. Once the query is complete, the map will update and the box will turn green, displaying the number of Tweets that were returned. Take note that if the number returned is equal to the query limit, then there are most likely more results than are displayed. Try applying some filters to return only the items you are interested in.

Query filtering options



The circles on the map represent individual tweets centered at the approximate location from which the message was sent. Hovering your mouse over a circle will create a pop up showing details of the message. This pop up gives the location in longitude and latitude, the user name, the date of the message as well as the content of the message itself.

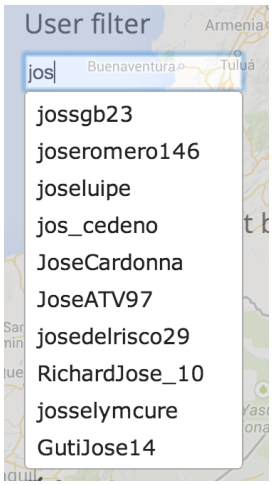
Several controls on the pop-up control panel allow you to refine the query in order to focus on a smaller set of Tweets. We will discuss the Time Filter and the User filter below.



The “Time filter” slider allows you to modify the time range of the displayed Tweets. Drag the left control to adjust the starting time and the right control to adjust the ending time. You have just effectively selected a smaller time window to examine. The database is automatically re-queried for this smaller time span. The function of the top button is to “zoom into” that smaller time window. After clicking the top button, a user-selected subrange (lets say only 3 days out of the original 10 days) fills the full slider. The user has effectively “zoomed in” to the 3 day range. Finer and finer time detail can be achieved by dragging the slider controls in towards the center and then “zooming into the subrange” with the top button each time. The positive effect this has is to provide finer and finer time range control as the user “pushes” their context into smaller and smaller time span regions to explore a target time range in detail. Further queries will be done with whatever current restrited time window is available.

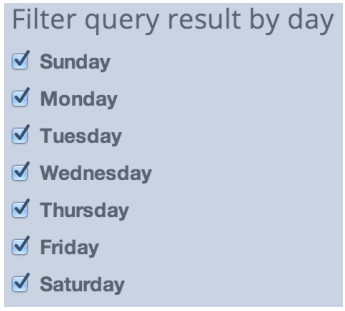
If the user wants to “pop” back out to look at longer time scales again, the bottom button “zooms out” or “pops back up” one level, so the slider range covers a greater timespan again. The

draggable bars are reset to match the current time boundary in the new, broader timescale. The user can continue to either “zoom out” or drag one or both of the handles to examine larger time windows. Eventually the bottom button will “gray out” indicating there are no more coarse timescales left. In other words, the user is back to the broadest timescale supported by the dataset.



The “User filter” box allows you to filter by a username. The text box will autocomplete as you type by searching the list of users in the current query (the entries currently displayed on the map). The list displayed will be the top 10 results sorted by the number of Tweets currently displayed. After you have selected a user, hit *enter* to refine the results.

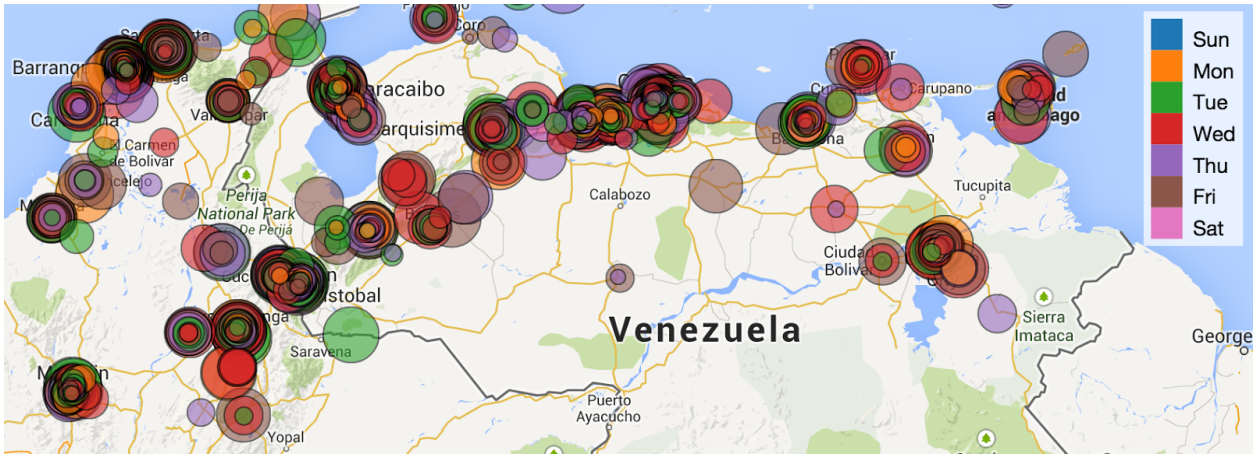
Multiple users can be displayed simultaneously by typing a list of usernames separated by spaces. To reset the filter and show Tweets from all users, remove all text from the input box and hit *enter*.



The “Filter query result by day” section allows you to limit the query to only certain days of the week. By default all days are selected, but you can check or uncheck the indicated days to limit the search. If no days are selected at all, the app assumes all days are active, so no days at all selected is equivalent to all selected. As soon as one or more days are selected, only tweets on the selected days will be displayed.

Visual appearance options

The remaining items in the configuration panel allow you to modify the appearance of the markers given a custom view of the returned query. In the screenshot below, the markers are colored by day and the size indicates the recency of the message with larger circles being less recent. Most of these controls are self explanatory.



Other controls allow you to color the markers by recency as well as by month and the opacity slider controls the transparency of the markers.

Conclusion

The Twitter Geomap application allows a user to browse through a set of Twitter messages that are geocoded and timestamped. The full text of the tweets is available and the user is provided with drill down tools to examine tighter geo- and temporal boundaries to examine the timing, placement, and content of tweets in the dataset being observed.