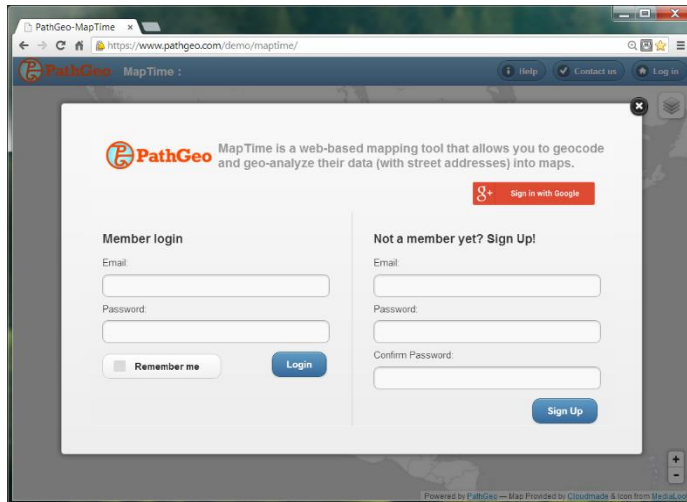# MapTime ™ Tutorial from Crime Data (Demo Data)
October, 2013

1. Register your PathGeo Account and start testing MapTime**™** here:
   https://www.pathgeo.com/demo/maptime/

You can create a new member account or sign in with Google.

If you log in with your Google account, an additional window may pop up asking to give MapTime**™** permission to access your account. Click 'Accept' if you wish to log in through Google. After sign-in, you can start to use MapTime**™** by either uploading your own data or trying our sample data. In this tutorial, we will use our sample data in Pacific Beach, San Diego.

2. Click the "Map Data" button at the top-right of the page. A popup window will appear.   Select the "**Tutorial: Crime Rate in Pacific Beach**" option at the bottom of the popup window. Now you will see the blue markers showing the 1023 crime report records in Pacific Beach (2012/07-09, three months).
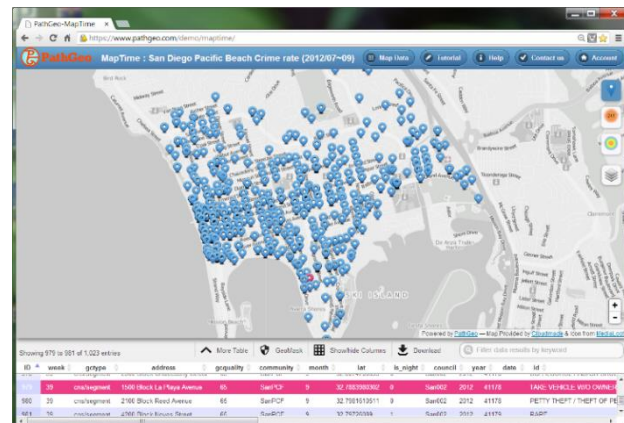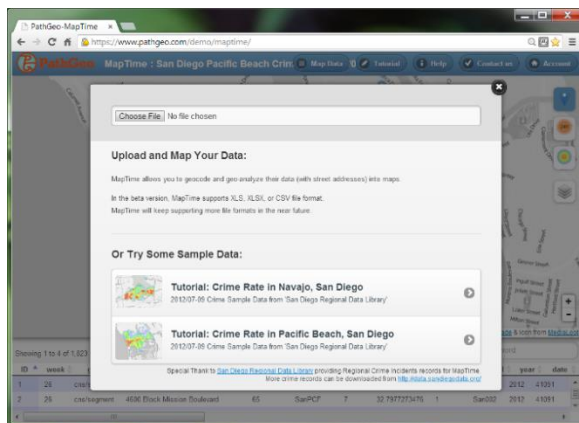
3. The first thing we can do is to take a closer look at the crime records. Click on the **"^More Table"** tab on the bottom of the window. You will see more record information in the Table View Area (in the bottom of MapTime). Each crime record was reported by their street addresses, but to protect locational privacy, these crime records only use 100 street block address for the geocoding (address matching) results. For more information about the other attributes in the crime records, please visit San Diego Regional Data Library. http://data.sandiegodata.org/dataset/clarinova_com-crime-incidents-casnd-7ba4-extract
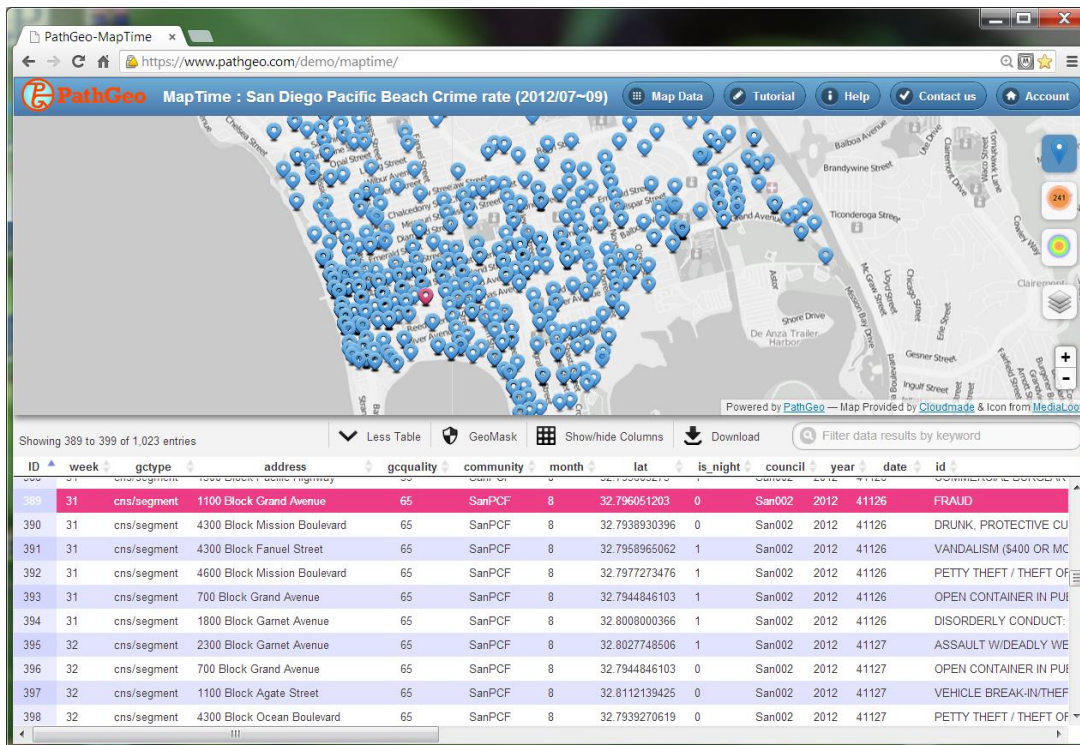
4. You can use the horizontal "**scroll bar**" on the bottom of the Table View window to see other attributes in the crime records, such as description (desc), crime type (type), distance to the near street lamps (lampdist), and neighborhood (nbrhood). You can also click on the "**Show/hide Columns**" button to hide specific columns you don't need. Let's click this button and uncheck the "ID", "week", "gctype", and "gcquality". After you uncheck each column, the table view will automatically change to the new setting.

5. Next, we will view crime patterns in Pacific Beach. Click on "Less Table" to shrink the table view. Now we would like to see some interesting spatial patterns. First, click on the "Hotspots" mapping icon on the right side of the MapTime (see the RED ARROW). Then click on the "Marker"(pinpoint) icon on upper right corner to turn off the display of map markers. The Marker icon is the top one among the four mapping icons on the right side of window. You will also notice that users can select different types of map symbols if needed.
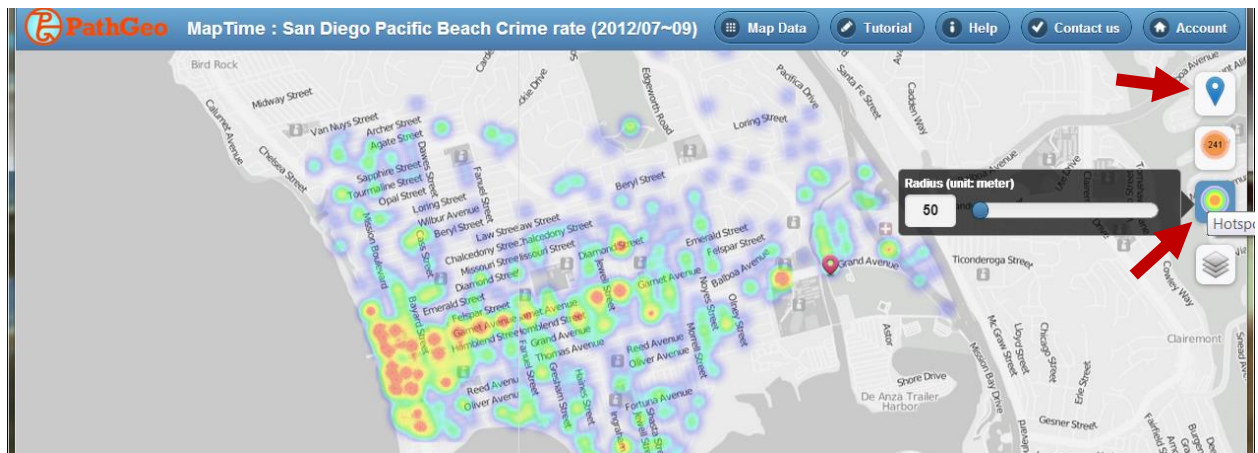
6. The hotspots function uses an algorithm (kernel density) to highlight the clustered crime records in different streets and areas. The red color areas indicate that more crime records are present and the green/blue areas indicate a lower number of crime records. You can change the radius of hotspot analysis in the icon tool. The current radius of hotspot analysis is 50 meters. You might notice that many crime records in Pacific Beach are located in Garnet Avenue, which is a famous area for bars and nightlife. You can try the **zoom in** (+) or zoom out (-) function by either clicking on the Zoom icon on the lower right corner of maps, or use your mouse's scroll roller to zoom.

7. The first hotspot view includes ALL crime records in Pacific Beach. We can use the keyword filter function to see different crime type patterns. Move your mouse cursor to the lower right corner to the text input field **[Filter data results by keyword]. Type "DUI" and then press Enter.**

8. Now you will see the table view records change from 1023 records to **68 records**, which only includes DUI records. The hotspot map is also automatically changed to reflect the cluster of DUI records.
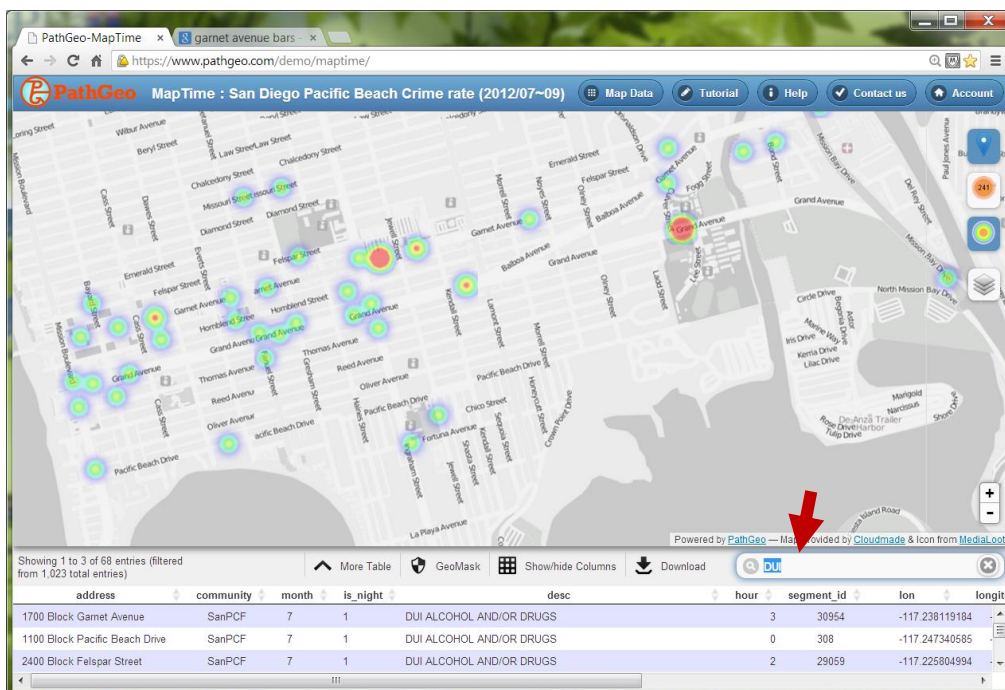
9. With this new hotspot maps, you can see two red spots showing in Pacific beach. But you don't know how many DUI records are located in the two spots. You can click on the "**Cluster Map**" icon now (the icon above the hotspot icon). The Cluster Map function can tell you the number of records in the cluster areas. However, the cluster number is calculated by combining nearby records, rather than from a single location. If you move your mouse cursor to each cluster circle, you will see a blue area, which shows the spatial extent of the records represented by this circle. For example, the following map shows 14 DUI records, which are clustered within the blue-shaded area.
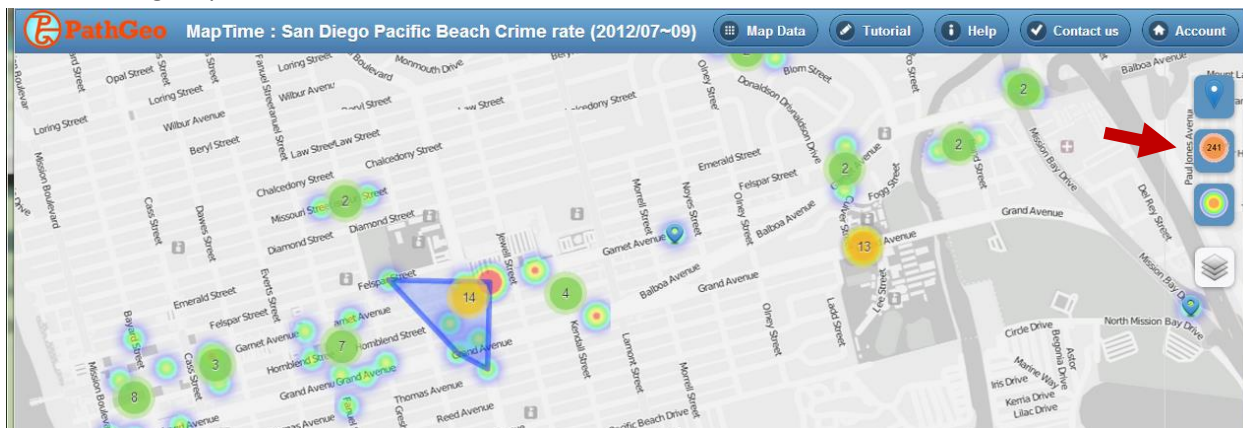

10. We can switch to another map view now. Click on the "**Cluster Map**" icon again to toggle-off the cluster maps. Click on the "Marker" icon and select one marker you like. Your map view will be changed with the new marker.
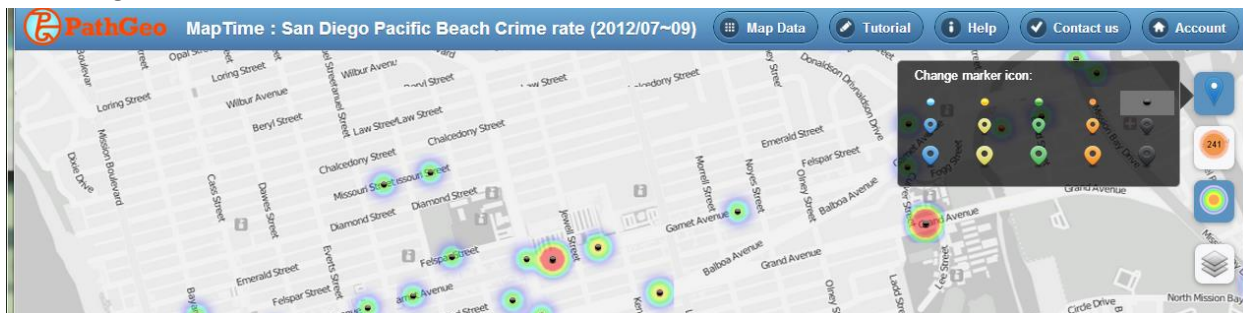

11. Let's view another crime type. Type "sex" in the keyword filter window. Twenty records (sex crime type) should be selected. Since the locations of sex crime might be very sensitive. We can use the GeoMasking function next to reduce the risk of locational privacy.

12. Click on the "**GeoMask**" function (on the Table View menu). Select "GeoMask 100m".


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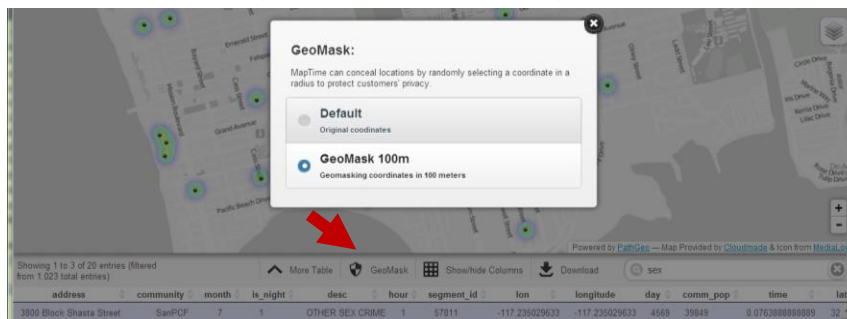
13. You will notice that the position of black dots have shifted randomly within 100 meters. You might want to zoom in more to see the change of point locations after GeoMasking.

14. Now you are able to export the sex crime records into your local computer without worrying about locational privacy concerns. This could be useful in situations where you may want publically share your data, but do not want to reveal exact locations. Click the "Download" button in the Table View. A popup window will be displayed showing the download options. Select the "Download Selected Data + Geomask" option and click the "Download" button to download the selected GeoMasked sex crime data for Pacific Beach.
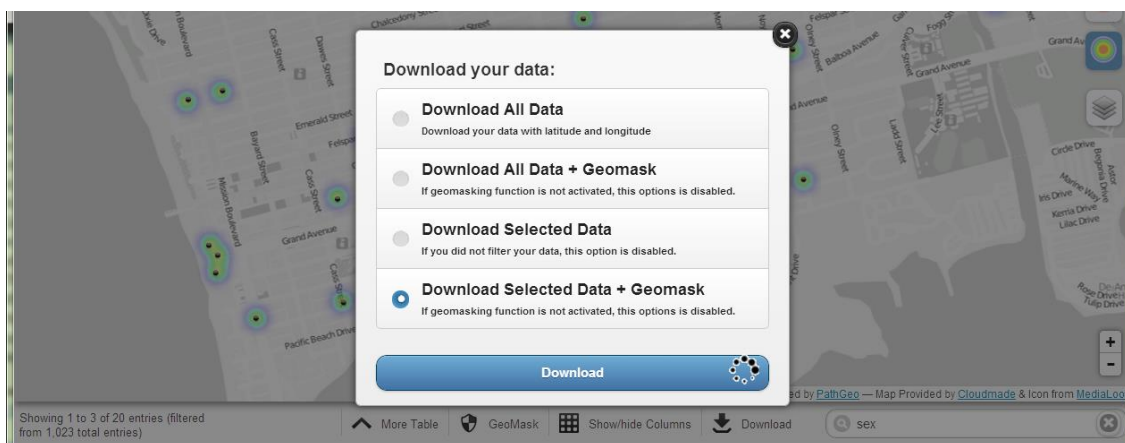
15. Now we finish our work. You can click on the "Account" icon on the top right window (blue menu) to see how many credits you have used in the process.
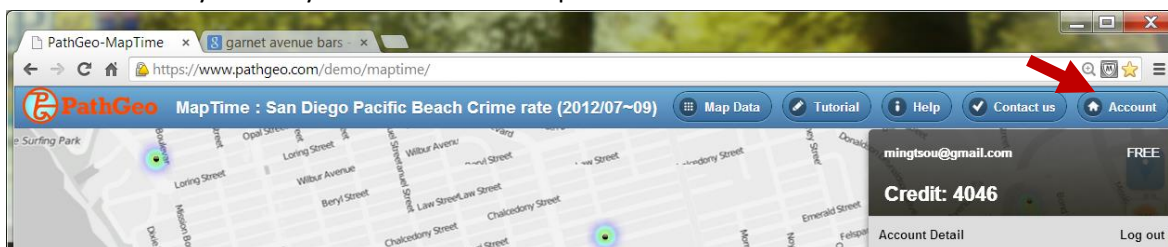
16. Click on the "Account Detail" below the Credit number. You can see your personal account information and your remaining credits in PathGeo.
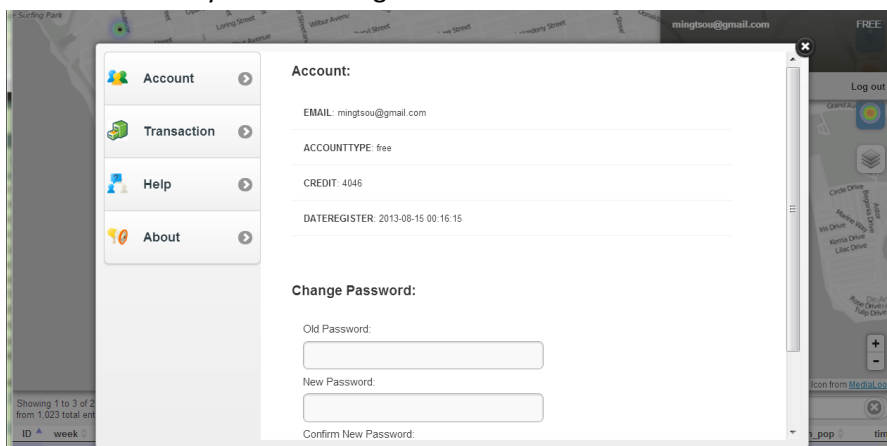
17. Click on the "Help" tab to the left of the account information. (You can either use this Help tab or click the "Help" button at the top of MapTime to submit your feedback to us). Now you can write down your comments, feedback, suggestions, and bug reports to us. We really appreciate your great help!
18. When you finish your comments, please click on "Submit". Thank you!

If you have any questions regarding MapTime or PathGeo, please email to info@pathgeo.com or use the "Help" menu in MapTime to submit your feedbacks.

Sincerely,

PathGeo Team. https://www.pathgeo.com/