

# WAYS OF PRESENTING AND ANALISING LARGE AMOUNTS OF VISUAL DATA

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We live in a visual society. Millions of photos are uploaded to the World Wide Web every day. Nevertheless, for a long time the role of images in the era of big data was underestimated, not given the necessary attention. Nowadays, certain media visualization techniques have already been invented for a large number of images, which facilitate their analysis, help find patterns, dynamics in a broad context. Here are some of them.

**1.Radial.** Radial visualizations place photos along a circle using upload dates, geographic coordinates, or visual attributes. One parameter controls the angle another controls the radius. These compact visualization forms enable to explore the data on multiple dimensions, presenting, for example, the images organized by their visual attribute (hue, brightness, texture, etc.) and by when and where they were taken – all in a singular visualization. It is particularly useful for studying temporal changes.

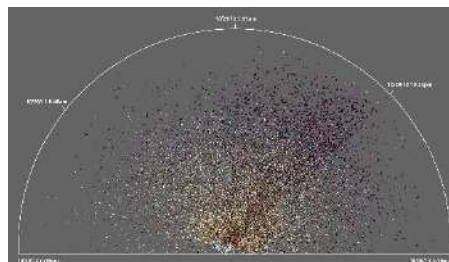


Figure 1 – Radial plot visualization of photos from the Brooklyn area during hurricane Sandy(November 29-30th, 2012) organized by time and hue.

**2. Montage.** Montage visualizations are grids of stitched images that can be organized according to time (upload date) or visual attributes (hue, contrast, etc.). This technique can unfold recurrent shifts of day and night, revealing collective “visual signatures” of places and photo taking routines in different times and locations.



Figure 2 - 53,498 Instagram images from Tokyo, sorted by upload date and time (top to bottom, left to right).

**3. PhotoPlot.** PhotoPlot visualizations use the principle of a scatterplot, but instead of plotting points software plots individual images. These visualizations allow to see the patterns of change over time in photos' visual characteristics.



Figure 3 –Photoplot visualization of Instagram photos from Brooklyn during hurricane Sandy(November 29-30th, 2012), organized by time and hue.

**4. Visual Traces.** We can also identify particular visual routines of individuals in the place. For example, on Figure 4 individual users' visual social traces in the city of New York are visualized. Each plot on the city map shows locations of photos shared on Flickr and Picasa. Blue pictures are by locals, red by tourists.



Figure 4 – Eric Fischer “Locals and Tourists #2 (GTWA #1): New York.”

**Conclusion:** Mentioned visualization techniques that show a large numbers of images in a single picture enable the exploration of both the photos' metadata and the patterns created by their content. Visualizing large amounts of user-generated photos according to location, time or multiple visual attributes can help reveal a particular “visual rhythm” or “visual signature” of each location, unfolding spatio-temporal variations in color and visual affinities.

## References

1. Instagram Cities [Electronic resource] – Access mode: <http://phototrails.info/instagram-cities/>
2. Zooming into an Instagram City: Reading the local through social media. [Electronic resource] – Access mode: <https://firstmonday.org/ojs/index.php/fm/article/view/4711/3698>
3. Phototrails [Electronic resource] – Access mode: <http://manovich.net/index.php/exhibitions/phototrails>.
4. Locals and Tourists #2 (GTWA #1): New York. [Electronic resource] –Access mode: <https://www.flickr.com/photos/walkingsf/4671594023/>