Tracking Crowds Movements and Burst of Interest during London 2012 Opening Ceremony using Twitter

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The movement of the crowds in big events can be monitored in a number of ways. The usage of mobile phone network data is one of the most pervasive approaches. However, this type of data is very expensive to collect and mobile telecom operators sell them at thousands of euros per hour of analyzed data. Accessing the content of SMS and phone calls is, of course, forbidden, thus this type of data cannot be used to track the burst of interest of the crowds during events. [1] reports on an experience conducted during London 2012 Opening Ceremony in tracking the movements of the crowds as well as their burst of interest analyzing a tweet stream in real time.

The figure above shows a sequence of heatmaps highlighting the presence of a crowd before, during and after London 2012 Opening Ceremony using geotagged tweets as a proxy for the presence of a crowd. The sequence shows a crowd exiting at Stratford subway and light rail station, funneling through Stratford walk, entering the stadium, assisting to the open ceremony and leaving the stadium to go back to Stratford.

The figure above shows the results of the analysis we performed on the 20 thousand tweets obtained from Twitter during the Opening Ceremony on July 27th be- tween 9 pm and 1 am. The burst marked with A coincides with the first appearance of the Queen. The two bursts marked with B appear when James Bond and the Queen apparently jumped from an helicopter at the Olympic Stadium. C and D coincide with the se- quence celebrating the National Health Service (NHS). E corresponds to the appearance of Rowan Atkinson in character as Mr Bean. F coincides with David Beckham driving a dramatically illuminated motor boat un- der Tower Bridge. G appears when Tim Berners-Lee posted live from the middle of the Olympic stadium a tweet containing #oneweb. The bursts under the curly brackets, collectively identified with H, are all related to hashtags containing names of nations that appeared during the welcome sequence lasting from 10:20 pm to midnight. The burst I matches the moment when, after the Parade, the Arctic Monkeys performed The Bea- tles’ “Come Together”. Bursts, collectively labelled with K, coincide with the sequence that lead to the lit of the Olympic cauldron.

For more information:
- watch the video on youtube:
- Presence of crowds in the olympic stadium area for the Opening Ceremony
- Presence of crowds in London for the Opening Ceremony
- Attention payed by Europeans to the Opening Ceremony
- Attention payed across the world to the Opening Ceremony References

[1]   Marco Balduini and Emanuele Della Valle. Tracking Movements and Attention of Crowds in Real Time Analysing Social Streams The case of the Open Ceremony of London 2012. Proc. of Semantic Web Challenge 2012. Available online at http://challenge.semanticweb.org/2012/