

A Tweet Consumer's Look At Twitter Through Linked Data Goggles Via Google Analytics

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Abstract. In this paper, we discuss the possibility to reflect Twitter's current trends by having a close look at the consumer's – i.e reader's – point of view. Our experimentation architecture takes advantage of the possibility to build a client-side browser extension for the initial data fetching. Several web services are used after that to enhance, store, analyse tweets and compute trends.

1 Introduction

1.1 Google Chrome Extensions

Google Chrome extensions¹ are small software programs that can be installed to enrich the browsing experience with the Google Chrome browser. They are written using a combination of standard Web technologies, such as HTML, JavaScript, and CSS. Chrome extensions bundle all their files into a single file that gets usually (but not necessarily) distributed through the Chrome Web Store. There are several types of extensions, for this paper we focus on extensions based on so-called content scripts. Content scripts are JavaScript programs that run in the context of Web pages, similar to the Firefox Greasemonkey extension². By using the standard Document Object Model (DOM), they can read or modify details of the Web pages a user visits. Examples of such modifications are, e.g., changing hyperlinks to remove potential `@target="_blank"` attributes, or increasing the font size.

1.2 Google Analytics

2 Twitter Swarm NLP Extension

With our Twitter Swarm NLP extension³, we inject JavaScript code via a content script into the Twitter.com homepage. The extension first checks if the user is

¹ Google Chrome Extensions: <http://code.google.com/chrome/extensions/index.html>. Text adapted from the description to be found there.

² Firefox Greasemonkey extension: <http://www.greasemonkey.net/>

³ <https://chrome.google.com/webstore/detail/dpbphenfakflfmdlanimlemacankjol>

logged in, and if so, retrieves the tweets of the logged-in user's timeline one-by-one, and performs NLP analysis via a remote NLP Web service on each of the tweets. The extracted entities are then displayed on the righthand-pane of the Twitter.com homepage, and sent to Google Analytics for further processing.

2.1 Twitter Swarm NLP Web Service

We have created a wrapper NLP Web service that merges results from existing third-party NLP Web services, namely from OpenCalais⁴, Zemanta⁵, AlchemyAPI⁶, and DBpedia Spotlight⁷.

2.2 Dealing With Extracted Entites On the Client Side

2.3 Dealing With Extracted Entites On the Google Analytics Side

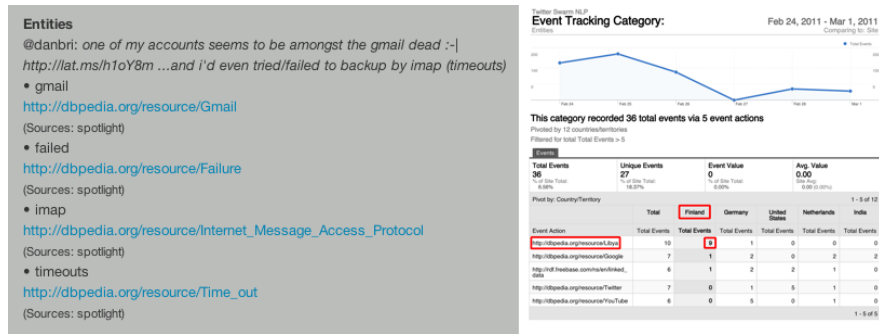


Fig. 1. Left: Screenshot of the extracted entites of a particular tweet as displayed by the Twitter Swarm NLP Extension. Right: Test.

3 Related Work

3.1 Linked Open Social Signals (TWARQL)

Previous work of Pablo N. Mendes, Alexandre Passant, Pavan Kapanipathi and Amit P. Sheth⁸ have shown a possible implementation of real-time information both pushed and pulled from Twitter. TWARQL⁹ is based on a distributed architectures which features:

⁴ <http://www.opencalais.com/>

⁵ <http://www.opencalais.com/>

⁶ <http://www.alchemyapi.com/>

⁷ <http://dbpedia.org/spotlight>

⁸ <http://knoesis.wright.edu/library/download/paper-wi10-MPKS.pdf>

⁹ <http://wiki.knoesis.org/index.php/Twarql>

- a client-side application which typically a Javascript-enabled web browser
- a "Social Sensor Server" to receive tweets and filter them according to the user's request. It is worth noting here that TWARQL filtering is based on web-semantic technologies: SPARQL, hash-tag resolution through glossaries and LOD cloud are used to extract the highest amount of information possible from the Twitter Streaming API.
- a number of distributed PuSH hubs which update clients as information flows (pushed-information model)
- another server – "Semantic Publisher" – registers user's interest and updates the hubs. The updated information is eventually displayed on the user's screen.

3.2 Twopular

Twopular¹⁰ is a work of Martin Dudek. It aims at analysing current Twitter trends. Since March 2008, Twopular takes advantage of OpenCalais services to extract entities from tweets retrieved from the Twitter Streaming API. Semantic entities are then used to reflect Twitter's current "trends".

4 Conclusion

As seen in the Related Work section, semantic analysis of a (real-time) Twitter stream is not new and has been successfully exploited to analyse tweets produced by the Twitter community. What we propose here is an insight into tweets consumers' interests to provide a more accurate view of Twitter trends.

References

¹⁰ Twopular website: <http://twopular.com/>