ReFluence: A Real-Time and Historic Visualization Application for Twitter Conversations

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Research Overview

Social networks provide a new and exciting way for individuals, businesses, organizations and governments to create and share information.

Twitter has enabled a range of important social activity to succeed, including identifying public health issues and more recently, as a platform for social and political change. However, in spite of this, the volumes of messages that are transmitted per day make identifying valuable content from the back chatter and ultimately, influential individuals from spam, difficult.
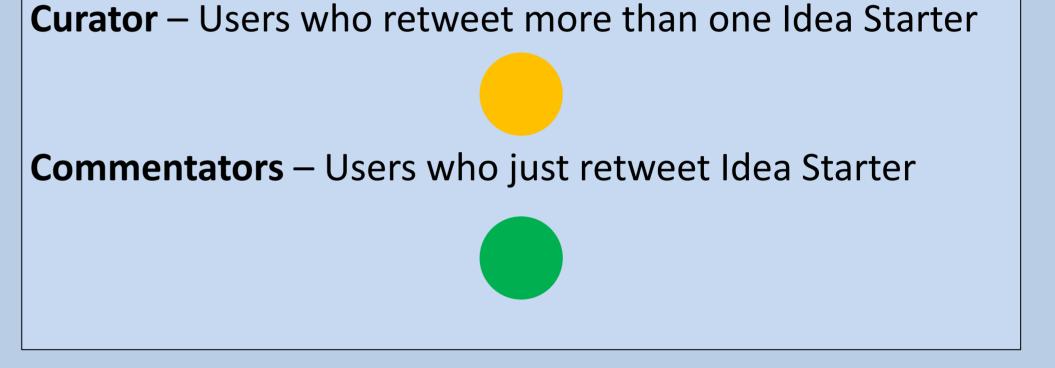
To tackle this, ReFluence, a visualization tool implements a user classification model has been developed. ReFluence uses Twitter's conversation network structures and classifies users based on their interaction behavior. ReFluence visualizes Twitter streams, providing a historic and real-time visualization of the growth of Twitter conversations between users, based upon the networks that form through the retweet and mention feature.
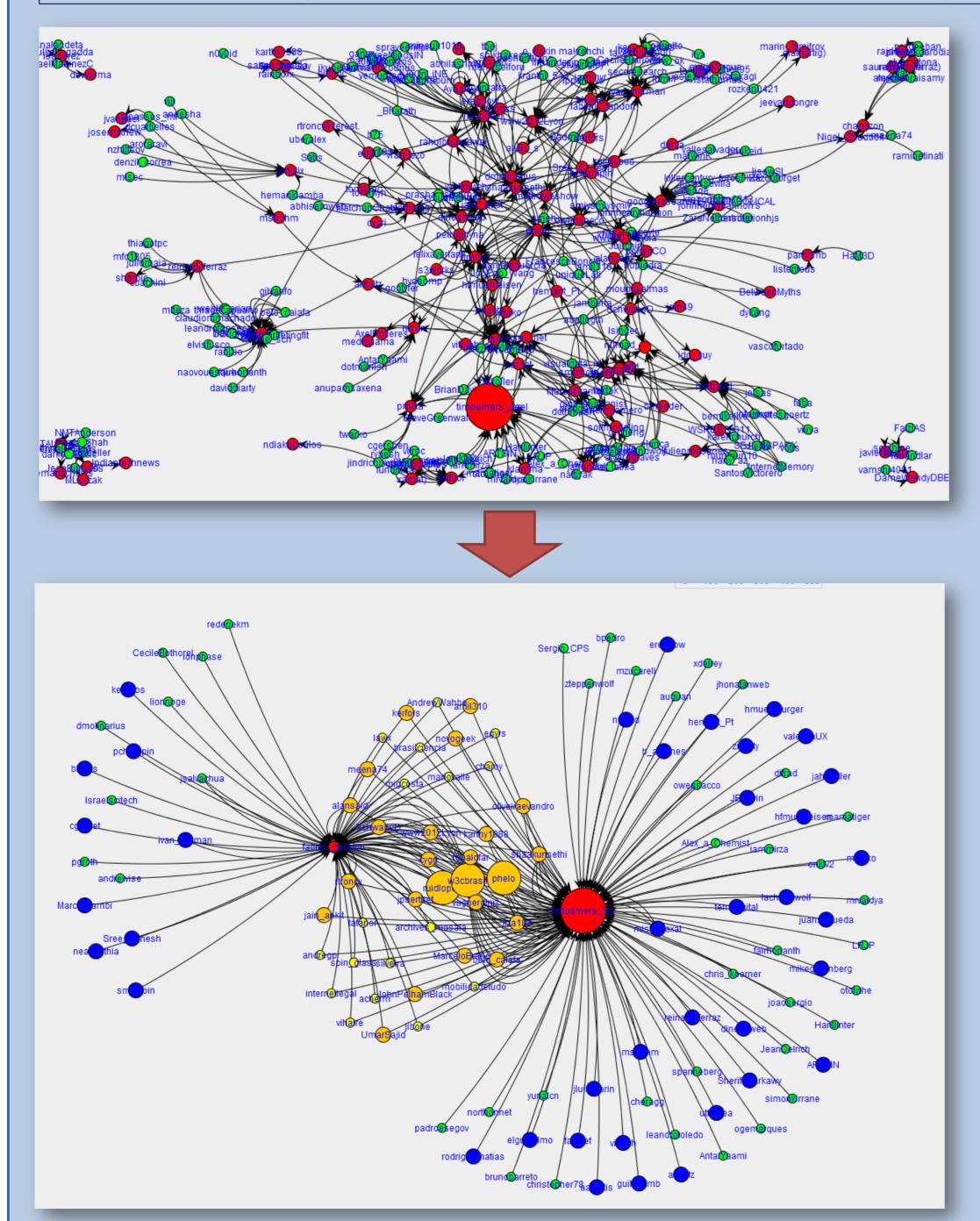
ReFluence & User Classification

ReFluence was based upon the desire to be able to visualize a growing network of communications within the Twitter service. ReFluence enables the 'playback' of the retweet and mention conversation between users, and also provide a way to classify users based upon specific behavior characteristics:

Idea Starter – Users with a large number of retweets

Amplifiers – Users who are first to retweet an Idea Starter

Curator – Users who retweet more than one Idea Starter

Commentators – Users who just retweet Idea Starter

Visualising Twitter Conversations using ReFluence and the Classification Model

Twitter Retweet Network of World Wide Web 2011 Conf.

Network of Retweets without Classification

- Without the classification model, identifying different user types within the network is impossible.
- There are many hubs of activity meaning there are a number of users being retweeted, but which ones are sharing valuable content?
- How can the users that are aggregating valuable content be identified?

Network of Retweets with Classification

- Applying the classification model provides a way to identify specific users based on a number of characteristics.
- The red nodes are those that have a large amount of retweets (value set at 80 in example), and the scale of the node denotes their ranking in terms of each other
- The yellow nodes represent the users that have retweeted more than 2 red nodes, therefore seen as a aggregator of news.
- The network now presents a view that potentially exposes important users within the network of communications