

Social Networks by Key Phrases in Digital Conversations

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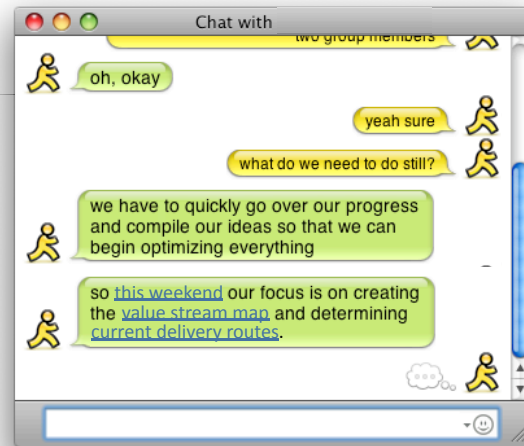
Abstract

I present a dynamic method for visualizing a conversation-based network built from IM logs and emails based on an ongoing instant message conversation. Conversations will be annotated and cross-referenced in-line with other conversations that can then be viewed, clipped, redacted, and shared with others, or simply browsed for reference.

1 Motivation

Conversations are rarely unique. Often times they are threaded and comprised of many sources. People are rarely linked only by other people. Often times friends meet through people, but the friendship is more than just a bridge of people. Commonly friends and acquaintances form because they tend to enjoy discussion of the same interests, or sometimes they communicate because of necessity of work. I want to show that not only linking people in this way is better than through the mere knowing of another person. Once the meaning of the relationship is derived, useful information about the relationship may be made salient.

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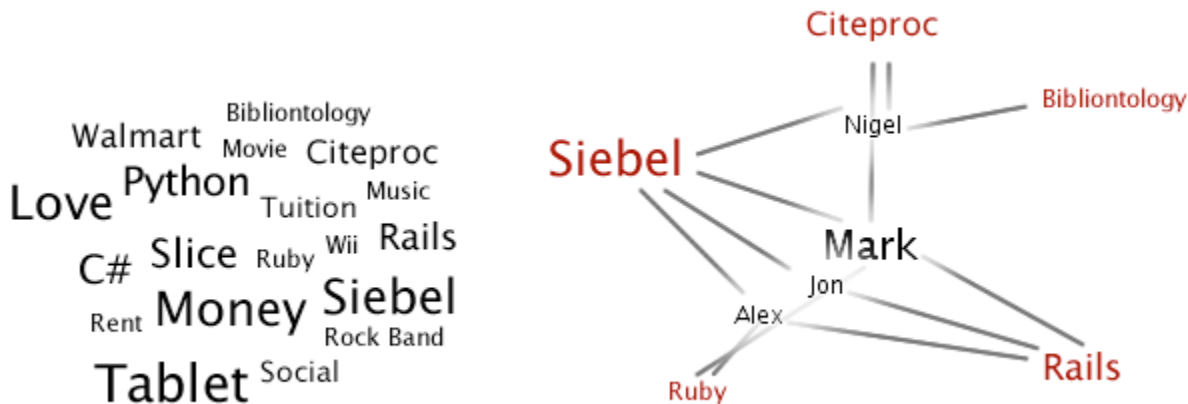


Sample chat with several key phrases cross-referenced

2 Method

2.1 Initialization

If a user is just starting to use the system, it may be helpful to index their existing conversations. The conversations will be analyzed for key phrases and then indexed in a database on those keys and also their email address or screen name. However, this is not strictly necessary, if for example a user has no instant message logs or if they don't keep records of their emails.



A concept web of common keywords, and a selection of keywords with users attached.

2.2 Key Phrases

As an emails are received and instant message conversation takes place it will be analyzed for key phrases and links to cross-references added to the message. Simultaneously, indexes on those phrases for the conversation will be placed in the database. Allowing future references to those keys to cross-reference with the ongoing conversation.

2.3 Key People

Important people to the conversation can then be inferred by the conversations that the key phrases link to. These people can be listed and the network for a conversation can automatically be made salient. Linking people by key phrases from conversations is much more useful than just a top down view of networks of friends, because the key words provide a concrete linkage, rather than just showing that people are acquaintances or share the same interests.

3 Visualization

3.1 Concept Net

A concept net will be built from the keywords and the overall prevalence of the keywords will determine their size in a tag cloud. Clicking on a keyword in the tag cloud will select all the keywords with similar concepts and form them in a circle. All the people with any keywords in the circle will appear on the visualization and will be drawn to the keywords they are associated with by their percentage of frequency of the term in conversation out of the sum of frequencies of the terms in their conversations. The percentage of the number of an individual's conversations including the terms out of the sum total of conversations mentioning the terms will determine the size of their names.

3.2 Auto Buddy List

A buddy list will then automatically be formed for the user. The groups will be based on the grouping of common keywords between them. The groups can be named, but will have no default name. If the experiment is successful, it should be obvious to the user what the relationship of the people is.

References

- [1] Judith Donath. Visualizing Email Archives.
<http://smg.media.mit.edu/papers/Donath/EmailArchives.draft.pdf>