

Social Network Fragments: An Interactive Tool for Exploring Digital Social Connections

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Abstract

We present a novel application for interactively visualizing the interpersonal networks that emerge during email interactions. While people have complex email interrelationships, no previous tools allow examining one's overall network.

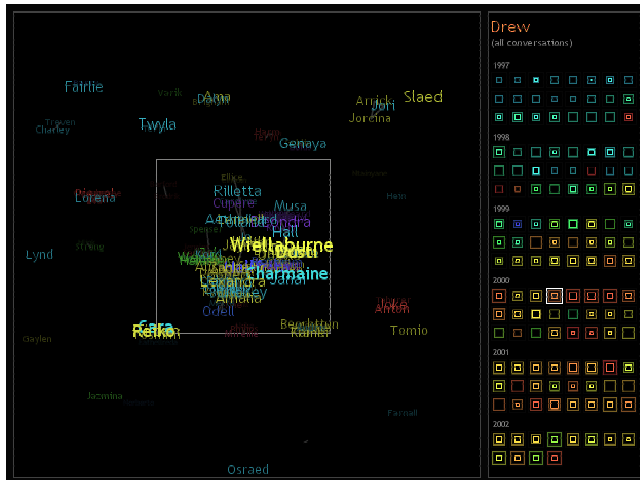


Figure 1. Interactive application view with history panel.

1 Introduction

Social networks define our relationship to others in society. Such connections help us define social context, which in turn affects the roles we embody. In online environments, the ability to derive context is challenged by the limited salient characteristics that are available. Email appears the same regardless of whom we are contacting, making it difficult to properly negotiate the social roles in which we intend to present. While social awareness is key to interaction, few tools exist to make these patterns available.

Social Network Fragments is an interactive visualization tool that allows users to navigate the social network patterns that emerge through regular email conversations. By analyzing the sender and recipient relationships, we are able to visually present the graph of interpersonal connections and their resultant clusters. We use a graph visualization style that has previously proven effective in a similar domain [DONATH 1995].

This application offers a novel lens through which individuals reflect upon their digital habits and the data that they produce.

2 Exposition

Derived from one person's email archive, *Social Network Fragments* reveals the relationships between hundreds of people. Connections are uncovered by analyzing the recipients of a given message. By assuming social awareness between the people associated with a message, albeit with different strength depending on role and number of recipients, we create a highly dimensional graph of the social relationships. Using a spring and

repulsion system to visually position the graph, clusters of tightly connected individuals separate themselves from the masses.

Color and font weight reveal elements of the relationships, including the shared social role and strength of connection between the subject and the individual. Animation shows how relationships emerge over time and a history panel reveals the quantitative email patterns such as frequency and quantity of messages. Users can interact with the system to explore individual relationships and clusters over time.

Such an interactive application is particularly valuable to the subject for behavioral self-awareness. Familiarity with the data allows one to properly adjust for outliers and understand the reasons why logically unrelated individuals are socially connected in one's network. In our initial experiences using and sharing this tool, we recognize its effectiveness in revealing otherwise hidden patterns and connections, many of which are indicative of unconscious convergence of social clusters. Such awareness allows people to monitor their behavior to more appropriately fit the social situation.

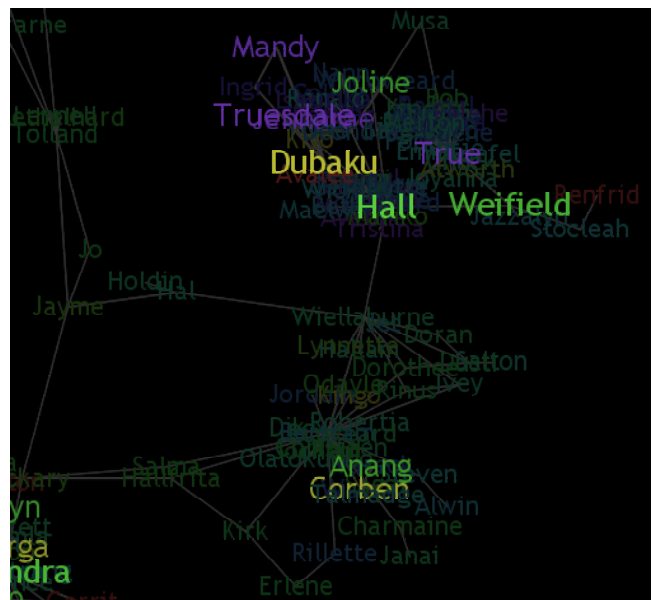


Figure 2. Data cluster and link close-up view.

References

Social Network Fragments (smg.media.mit.edu/projects/SNF/) emerged at MIT's Media Lab, Sociable Media Group [BOYD 2002] in collaboration with Atof Inc as an extension of *BuddyGraph* (www.buddygraph.com).

BOYD, D. 2002. Faceted Id/entity: Managing Representation in a Digital World. MIT Master's Thesis.

DONATH, J. 1995. Visual Who. Proceedings of ACM Multimedia '95, Nov. 5-9, San Francisco CA.