

# iBlogVis: An Interactive Blog Visualization Tool

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## Abstract

We developed and evaluated a visualization tool for browsing individual blog archives. In our study, we solicited qualitative feedback from the participants to explore the reasons behind their usability ratings. This feedback reveals factors that are deemed important in selecting entries to read, and adds to the understanding of blogging practices. Based on our analysis, we propose two design principles to complement the current blog interfaces: (1) A blog should provide a rich overview of its content to ease information exploration; and (2) A blog should utilize social interaction history to help users find potentially useful entries.

## Introduction

The current blog interfaces lack support for facilitating exploration of blog archives. A typical blog only provides an overview of its content in terms of a tag cloud and links to monthly archives. While useful, such an overview doesn't offer any cue regarding where to find potentially useful entries in the blog. Should there be a valuable entry posted six months ago, new visitors would likely miss it because the entry is now less visible in the blog. Therefore, blogs need to provide additional support to assist users in finding interesting entries in their archives.

Our approach to supporting exploration of blogs is based on two design principles. First, a blog should provide a rich overview to help users reason about the blog at a glance, enabling them to quickly analyze and form an impression whether the blog matches their information needs. Second, history of interaction in a blog should be used to help users locate valuable entries in the archive. Thought-provoking entries usually spark lively discussion. Visualization of the number of comments on entries, for example, would allow users to identify popular entries at a glance. To explore the potential of these design principles, we developed an interactive tool for browsing a blog archive (iBlogVis). We discuss the design of the tool and the results of the usability study elsewhere (Indratmo et al., n.d.). Here we focus on our qualitative analysis to extract factors that are deemed important or influential in browsing blog archives.

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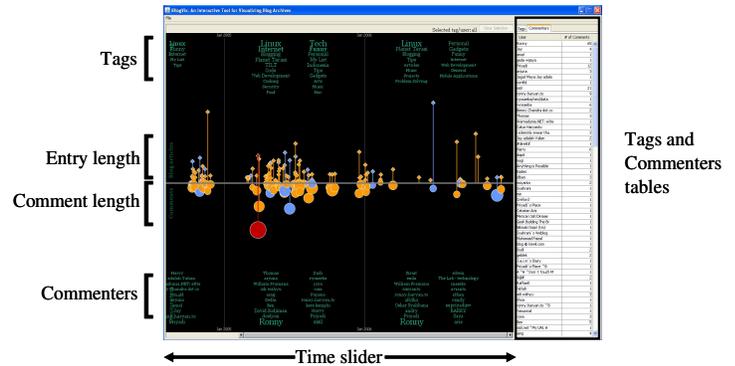


Figure 1. iBlogVis visualizes a blog archive along a timeline.

## The Visualization Tool

We implemented our prototype as a desktop application using Java and the Prefuse toolkit (Heer et al., 2005). The tool has a pre-processing module that both transforms the data structures of a blog into tables and the GraphML file format (<http://graphml.graphdrawing.org/>) and computes the aggregate values required by the visualization, such as the popularity of tags and commenters, the lengths of entries and comments, and the number of comments on each entry. The data set used in the study contained approximately 100 entries and 300 comments<sup>1</sup>. iBlogVis follows heuristic guidelines on information visualization: “overview first, zoom and filter, then details-on-demand” (Shneiderman, 1996). Along a timeline, the overview depicts the lengths of entries, the total length and the number of comments on each entry (represented by line and circle with radius proportional to the number of comments), most popular tags, and most frequent commenters (see Figure 1). This overview enables users to scan the blog content quickly, to identify entries that have received many comments (for social navigation), and to see the temporal posting patterns of the blogger. Users may select a subset of entries by filtering the collection by tag, posting time, or commenter. They can view the content of an entry through a pop-up window. When an entry is opened, iBlogVis changes the entry's color to help users keep track of their browsing activity. A demo is available at <http://www.cs.usask.ca/~xxi176/iblogvis.mov>.

<sup>1</sup> Thanks to R. Haryanto for providing the data set.

## Methodology

The study participants consisted of 19 students (13 men and 6 women) whose ages ranged from 23 to 37 years old. Potential participants had to have some experience of browsing the Internet and reading blogs. Most of the participants had background in computer science, whereas a few were from other departments such as biology and education. Each subject received an honorarium of \$10.

Participants were first introduced to the features of the visualization tool and given an opportunity to practice using the tool. Then they received a set of tasks covering typical blog browsing tasks (e.g., finding the most recent entry, filtering entries by tag) and other tasks that were specifically supported by our tool (e.g., identifying popular entries, recognizing regular commenters). After that, participants rated their satisfaction with the tool regarding the support they received while completing the given tasks. Besides focusing on the usability issues of our tool, we solicited qualitative responses from the participants about the rationale behind their usability ratings, the most and least favorite feature of the tool, and desired functions that did not exist in the tool. During the data collection session, we also observed and took notes of comments from the participants. These notes and open-ended responses from the participants are the focus of our analysis in this paper.

## Qualitative Results

All of our informants perceived that having a rich overview is useful while browsing blog archives. A common reason was that an overview can help the user learn about the content and the characteristics of a blog and the blogger quickly. An overview is especially useful for people who encounter and explore new blogs. While visiting a new blog, people are not familiar with its content and quality. Ideally, they should be able to quickly assess if the blog they are visiting matches their taste or information needs. An overview can help them form the first impression of a blog, assess its quality, and decide whether to continue exploring the blog.

Most of our informants thought that having access to social interaction history is useful. By observing social cues, users can follow the crowd to find interesting or contentious entries in a blog. In other words, visualization of social interaction history offers indirect recommendation about potentially useful entries to the user.

Social cues can also serve as a collaborative filter to reduce the number of entries that potentially contain valuable information, that is, entries that have attracted a lot of attention from the audience:

There might be hundreds of entries with the tag I want, and the community dynamics [visualization of social interaction history] can help me to filter them.

Due to the versatility of blogs as a communication medium, not all blogs offer useful information to their visitors. For example, blogs as personal diaries probably are relevant only to the bloggers and their close friends and families. In contrast, blogs attracting a large audience most likely contain information that is relevant and useful for the general public. The presence of social cues can be used to assess the relevance, quality, and influence of a blog.

The most favorite feature of our visualization tool was the visualization of the lengths of entries and comments. Seven participants (out of nineteen) mentioned that this visualization was their most favorite feature of the tool:

I like that the length of a line signifies how long the blog entry/comment were. I haven't seen that before and [the visualization] displays the "tempo" of the blogger (lots of short posts, etc.).

Some participants mentioned that the decision to read an entry is influenced by the length of the entry and its comments. One participant preferred to read relatively short entries with many comments because he often only had a short time to check an entry. Visualization of the lengths of entries and comments would help him make a decision whether to read an entry without having to actually open the entry. Thus, blog visualization could help users make a qualitative judgment about the characteristics of entries to select those that match their preference.

## Conclusion and Future Work

Providing a rich overview of a blog archive and visualizing social interaction history enable users to reason about the archive at a glance and provide heuristic guidelines for selecting entries to read. Our study participants enjoyed seeing patterns, especially posting patterns of bloggers and characteristics of their entries. We expect that adding visualization of the lengths of entries and comments along a timeline would help users explore blog archives and increase their satisfaction with blog interfaces. In future work, we will examine quantitatively how well social interaction histories can be used to support browsing tasks. From this study, we expect to outline a framework for understanding the role of social interaction histories in supporting information exploration.

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