

KeyStrokes: Personalizing Typed Text with Visualization

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Abstract

With the ubiquity of typed text, the style and much of the personality of handwriting has been lost from general communication. To counter this we introduce an artistic real-time visualization of typed messages that additionally captures and encodes aspects of an individual's unique typing style. The potential of our system to augment electronic communication was evaluated and the results are provided along with analysis of their implications for social visualization.

Categories and Subject Descriptors (according to ACM CCS): H.5.2 [Information Interfaces and Presentation]: User Interfaces – Graphical user interfaces (GUI); I.3.3 Computer Graphics Display Algorithms

1. Introduction

Electronically written text communications are becoming the standard for today's correspondence. E-mail and instant messaging are already replacing handwritten letters and messages. Even e-cards are now being used for birthdays or holidays as a replacement for the physical card. People can converse across distances electronically quickly and cost-effectively, making it a very popular choice for conversation. However, typed text messages lack the personal character of handwriting. Some characteristics of the message author's writing style, such as neatness of writing, or how individual letters are shaped is lost in typed messages. This lack of personal character has led to attempts to enliven electronic messages through ASCII art, emoticons, or through the embedding of HTML options.

The goal of this work is to build visualizations that automatically encode personal typing characteristics to enrich communication. By looking at how people type an electronic message, we can notice many different typing styles involving typing speed, typing rhythm, hand-usage, and how many times letters or words are erased, reprinted, or replaced. We capture and use the details of a person's style to create a visual representation of a message that can then be used

for asynchronous distribution, for example, as an electronic postcard. Our visualization differs from previous approaches in that we focus on visualizing the process of creating a message whereas previous work has mostly been concerned with visualizing characteristics of the already created words and sentences.

This work has two main contributions. Our first contribution is the KeyStrokes system for visualizing personal and message characteristics of typed text. We know of no other information visualization that attempts to display this type of data for personalizing electronic communication. An evaluation and an analysis of the system in terms of its design and motivation forms the second contribution of this work.

2. Related Work

KeyStrokes is part of a growing body of research that uses text as a source for social data analysis. Text, in its various forms, is probably one of the most prevalent data sources available today. Thus, not surprisingly, a large number of visualization techniques have been developed that represent different aspects of textual data. The body of work most related to our system is concerned with visualizing the social aspects of text-based communications. Several visualiza-