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VizScribe: A Visual Analytics Approach to Understand Designer Behavior

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Abstract

Design protocol analysis is a technique to understand designers' cognitive processes by analyzing sequences of observations on their behavior. These observations typically use audio, video, and transcript data in order to gain insights into the designer's behavior and the design process. The recent availability of sophisticated sensing technology has made such data highly multimodal, requiring more flexible protocol analysis tools. To address this need, we present VizScribe, a visual analytics framework that employs multiple coordinated multiple views that enable the viewing of such data from different perspectives. VizScribe allows designers to create, customize, and extend interactive visualizations for design protocol data such as video, transcripts, sketches, sensor data, and user logs. User studies where design researchers used VizScribe for protocol analysis indicated that the linked views and interactive navigation offered by VizScribe afforded the researchers multiple, useful ways to approach and interpret such multimodal data.

Keywords: Protocol analysis, design research, design behavior, human-computer interaction, information visualization, visual analytics