SIMPLIFYING OVERVIEWS OF TEMPORAL EVENT SEQUENCES

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MOTIVATION

The analysis of new data is often difficult as modern datasets can be overwhelmingly large. Through observing the practices of analysts working with the event sequence visualization tool EventFlow, we identified three techniques to reduce initial visual complexity resulting in a simplified overview.

SIMPLIFYING TECHNIQUES

We developed the following three overview simplifying techniques and support user interfaces for EventFlow:

1. Provide an Initial Pair: For novice users, we immediately suggest an initial pair of event categories to display in order to help start analysis.

2. Provide a Ranked List of All Pairs: Intended for advanced users, we provide a ranked list of all possible pairs of event categories. The pairs can currently be ranked by six different metrics.

3. Provide an Event Category Matrix (ECM): Intended for expert users, the ECM displays overviews of every event category pair. This allows the user to explore complexity or identify outliers.

VIDEO WEBSITE

https://www.youtube.com/watch?v=k0kh2Tn5898
http://hcil.umd.edu/eventflow/

USABILITY TESTS

We refined these techniques and interfaces over the course of 2 usability studies with 11 participants. Participants were trained on the use of EventFlow and then shown the dataset shown here. Using a “think aloud” protocol, we captured feedback on the use of each technique and interface over a 40 minute session.

CONCLUSION

Our usability studies demonstrated that all three techniques were learnable without training and suggested that they may help event sequence analysts reduce initial visual complexity, thereby accelerating data exploration.