Brief Bio and (PR)^2: Problems & Pitches – Rants & Raves by *Chris Weaver*

Self Introduction

Chris Weaver is an Assistant Professor in the School of Computer Science and Associate Director of the Center for Spatial Analysis at the University of Oklahoma. He holds a B.S. in Chemistry and Mathematics from Michigan State University and an M.S. and Ph.D. in Computer Science from the University of Wisconsin-Madison. Along the way, he developed a passion for information visualization and visual analytics. He may or may not be developing a new visual interaction technique for some terribly interesting and important data set as of this very moment—you should ask him. Chris' grand tour of academic research so far includes analytical chemistry, cognitive psychology, operating systems, databases, human-computer interaction, and just enough time with geographic information systems folks to keep from getting totally lost in airports. He was a post-doctoral Research Associate with the GeoVISTA Center in the Department of Geography at Penn State, where he helped to found the North-East Visualization and Analytics Center. His current research in information visualization and visual analytics focuses broadly on synthesis of highly interactive visual interfaces for exploring and analyzing heterogeneous multidimensional data sets.

Selected Publications:

- Chris Weaver. Multidimensional Data Dissection Using Attribute Relationship Graphs. *Proceedings of the IEEE Conference on Visual Analytics Science and Technology (VAST)*, 75–82, 2010. *[10.1109/VAST.2010.5652520]*
- Chris Weaver. Cross-Filtered Views for Multidimensional Visual Analysis. *IEEE Transactions on Visualization and Computer Graphics*, 16:2, 192–204, 2010. *[10.1109/TVCG.2009.94]*
- Chris Weaver. Conjunctive Visual Forms. *IEEE Transactions on Visualization and Computer Graphics*, 15:6, 929-936, November-December 2009. *[10.1109/TVCG.2009.129]*
- Chris Weaver, David Fyfe, Anthony Robinson, Deryck W. Holdsworth, Donna J. Peuquet and Alan M. MacEachren. Visual Exploration and Analysis of Historic Hotel Visits. *Information Visualization (Special Issue on Visual Analytics)*, 6:1, 89–103, 2007. *[10.1057/palgrave.ivs.9500145]*
- Chris Weaver. Building Highly-Coordinated Visualizations In Improvise. *Proceedings of the IEEE Symposium on Information Visualization (InfoVis)*, 159–166, 2004. *[10.1109/INFVIS.2004.12]*

Links:
http://www.cs.ou.edu/~weaver/
http://www.cs.ou.edu/~weaver/improvise

General Questions

1) What are your main interests in attending the workshop?
I hope to network with fellow tool builders and to exchange design knowledge with them.

2) What are the tools or services you would like to share at the workshop?
I will share knowledge about the design of the Improvise visualization environment, recent enhancements in its architecture to support flexible event handling, and specific design patterns in its language to support multidimensional data analysis.

3) Please list three features or functions of your tools or services that are most important for the users.
The most important features are live design of visualization tools, an expressive language for visualization design, and flexible specification of how visual representations and encodings depend on interaction.

4) What are the major concerns for the architect design of the tools and services?
The primary concern is the long, steep learning curve of the visualization language. Other major concerns include poor scalability of query processing, lack of broad support for hierarchical and graph-structured data, and insufficient modularity.

5) Are you aware of especially innovative approaches to plug-and-play feature where algorithms and plugins can be shared between different tools? If yes, please list down the approaches.
I am not aware of current approaches. Becoming aware is one of my reasons to attend the workshop.

6) What are the challenges in developing the tools and services?
A broad challenge is to overcome inflexible synthesis by supporting modularity that is organic and semantic rather than mechanical and syntactic.

7) Are you or your group working on any of these challenges? If yes, please explain.
No, at least not in any direct fashion.

8) Does your development team contain volunteer developers? If yes, please explain how they are involved.
No.

9) What would you like to learn and achieve at the workshop?
I would like to leave with improved understanding of current practices and recent thinking on plug-and-play architecting.