Abstract

Computer-based visualization (vis) systems provide visual representations of datasets designed to help people carry out tasks more effectively. Visualization is suitable when there is a need to augment human capabilities rather than replace people with computational decision-making methods. The design space of possible vis idioms is huge, and includes the considerations of both how to create and how to interact with visual representations. Vis design is full of trade-offs, and most possibilities in the design space are ineffective for a particular task, so validating the effectiveness of a design is both necessary and difficult. Vis designers must take into account three very different kinds of resource limitations: those of computers, of humans, and of displays. Vis usage can be analyzed in terms of why the user needs it, what data is shown, and how the idiom is designed. I will discuss this framework for analyzing the design of visualization systems.

Bio

Tamara Munzner is a professor at the University of British Columbia Department of Computer Science, and holds a PhD from Stanford. She has been active in visualization research since 1991 and has published over 65 papers and book chapters. Her book Visualization Analysis and Design appeared in 2014. She co-chaired InfoVis in 2003 and 2004, co-chaired EuroVis in 2009 and 2010, and is chair of the VIS Executive Committee. Her research interests include the development, evaluation, and characterization of information visualization systems and techniques. She has worked on problem-driven visualization in a broad range of application domains, including genomics, evolutionary biology, geometric topology, computational linguistics, large-scale system administration, web log analysis, and journalism. Her technique-driven interests include graph drawing and dimensionality reduction. Her evaluation interests include both controlled experiments in a laboratory setting and qualitative studies in the field. She received the IEEE VGTC Visualization Technical Achievement Award in 2015.