THREE papers in this issue of IEEE Transactions on Visualization and Computer Graphics (TVCG) are expanded versions of ones presented at InfoVis 2005. These examples of the cutting edge of information visualization research showcase the diversity and depth of the field, illustrating new display techniques as well as novel application domains for information visualization systems. The three papers focus on the visualization of three different styles of data: graph-based data, time series data, and categorical data. The techniques developed and described in these papers may also be applicable to data from a variety of problem areas and the authors include both design motivations in their work as well as illustrative examples of the application of the techniques.

“Drawing Directed Graphs Using Quadratic Programming,” by Tim Dwyer, Yehuda Koren, and Kim Marriott, won the InfoVis 2005 Best Paper Award. In this paper, the authors introduce a new method for drawing directed graphs that combines constraint programming techniques with a high performance force-directed placement algorithm. The technique is useful for highlighting hierarchies in directed graphs while retaining beneficial properties of force-directed placement strategies such as proximity and symmetry relations. The authors also describe experiments that show this new visualization technique can convey the structure of large digraphs better than the most widely used hierarchical graph drawing method.

“Designing for Social Data Analysis,” by Martin Wattenberg and Jesse Kriss, explores how an information visualization tool may become part of a dynamic online social environment. The authors focus on the area of baby naming and provide a delightful tool called the NameVoyager, a Web-based system that allows people to explore historical trends in the names that parents give to their children. The NameVoyager garnered huge interest on the Web when it was deployed and the authors explore how the system facilitates a form of social data analysis. The paper describes design decisions and implementation issues that arose for the system and it considers some of the reasons why the system became so popular. The paper concludes by discussing the design of an extension to the system for a more complex data set.

“Parallel Sets: Interactive Exploration and Visual Analysis of Categorical Data,” by Robert Kosara, Fabian Bendix, and Helwig Hauser, applies a variation of the well-known parallel coordinates visualization technique for representing categorical data. The introduced technique shows data frequencies instead of individual data points and uses boxes and parallelograms within the parallel coordinates plot. The authors include a rich set of interaction techniques with the visualization that allow viewers to examine many different perspectives on the data. They illustrate the power of their visualization through sample analysis scenarios with two example data sets.

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Guest Editors

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