Extreme Visualization: Squeezing a Billion Records into a Million Pixels

Using dynamic sliders and other graphical selectors to specify queries with results presented via information visualization techniques, is a technique for filtering that has proven to be effective for many tasks in which visual presentations are useful for spotting relationships, clusters, outliers, gaps, and other patterns. This paper describes current and proposed solutions for interactive visual exploration of billion-record datasets that facilitate sense-making.

During the process of extreme visualization, the following problems need to be overcome:

* Performance of the database during exploration.
* Ensure 100ms of update time for display
* Information-rich and compact visual representations.
* Seeing density plots, aggregation icons, and specialized markers in rich displays
* Cognitively comprehensible interaction controls and coordinated windows.

Also discussed in the paper talk are Atomic Visualization, Aggregate Visualization, and Density Plot Visualization

In conclusion, visualization techniques vary depending on the situation. It is true that Gigabyte displays will be useful for certain tasks, but innovative interface design is likely to have a greater payoff and wider usage for other tasks. A strong collaboration between researchers and implementers of information visualization and database management will ensure widespread use of billion record visualizations.