Every Algorithm Has Art in It

Treemap Art Project

By Ben Shneiderman, August 2013

treemapart.wordpress.com

Dozens of interesting variations have emerged such as the Voronoi treemaps and circular treemaps. Wikipedia offers further perspectives on the topic as well as links to treemapping software.

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open source tools such as SequoiaView and d3.
Although I conceived treemaps for purely functional purposes (understanding the allocation of space on a hard drive), I was always aware that there were aesthetic choices in making appealing treemaps, such as the layout, color palette, and, aspect ratio of the entire image. Also, certain treemaps were inherently interesting because of the data displayed or patterns revealed.

Colored rectangular regions have been a popular theme in 20th century art, most notably in the work of Piet Mondrian, whose work was often suggested to have close affinity with treemaps. Not all his designs are treemaps, but many are. His choice of colors, aspect ratios, and layout are distinctive, so simulating them with a treemap is not as trivial as you might think. Gene Davis’s large horizontal paintings with vertical stripes of many colors were more easily generated with slide-and-dice treemap algorithms. The rectangles in Josef Albers “Homage to the Square” or Mark Rothko’s imposing paintings are not treemaps, but these works influenced our artistic explorations. Other modern artists such as Paul Klee, Kenneth Noland, Barnett Newman, and Hans Hofmann gave

further provocations to the images in this collection.

I explored the possibility of treemap art several years ago with my cousin Tobi Sznajderman, a jeweler, who I commissioned to make me a set of treemap cufflinks based on the top ten songs on the itunes list:

The treemaps were developed at the University of Maryland Human-Computer Interaction Lab starting in 1990 and have a significant history. Our software tool to produce treemaps is free to download and use: www.cs.umd.edu/hcil/treemap

Several interesting treemaps are available to explore at the Hive Group website, which has licensed our software. Their examples include itunes, nutrition, earthquakes, politics, etc. The treemaps generated with other commercial tools such as Macrofocus TreeMap and Panopticon show a variety of styles as do