Heatmaps

Statistics 4868/6610 Data Visualization

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3/2/2016

Introduction

Today Chapter 7.

- Heatmaps
- Chernoff Faces
- Star Chart / Radar Chart / Spider Chart
- Parallel Coordinates Plot (Next)
- Dimension Reduction - Multidimensional Scalling (Next)
- Cluster Analysis (Next)
- Outliers

Heatmaps

One of the most straightforwad ways to visualize a table of data is to show it all at once. Instead of the numbers though, you can use color to indicate values.

You end up with a grid the size of the orginal data, but you can find relatively high and low values by color.

- observations are the rows, called *units* by the author
- variables are the columns

Heatmaps

Heatmaps are often used with summarized data.

For example, in the basketball data, each player's statistics are used for a season. Percentages and averages.

Another example of the use of Heatmaps is the presentation of microarray data.

Bioconductor

Heatmaps in R

Chernoff Faces

Often you want to see each observation as a whole instead of split up by several metrics. Chernoff Faces display multiple variabiles at once by positioning parts of the human face, such as ears, hair, eyes, and nose, bases on the values in a dataset.

The assumption is that you can recognize people's faces easily in real life, so you should recognize small differences when they represent data.

Star Charts

Star Charts modify a shape to match data values. Start in the center and extend to the **maximum** of the variable.

Also, known as Nightingale charts or Polar Area diagrams.