CS-5630 / CS-6630 Visualization
Best Projects, Review

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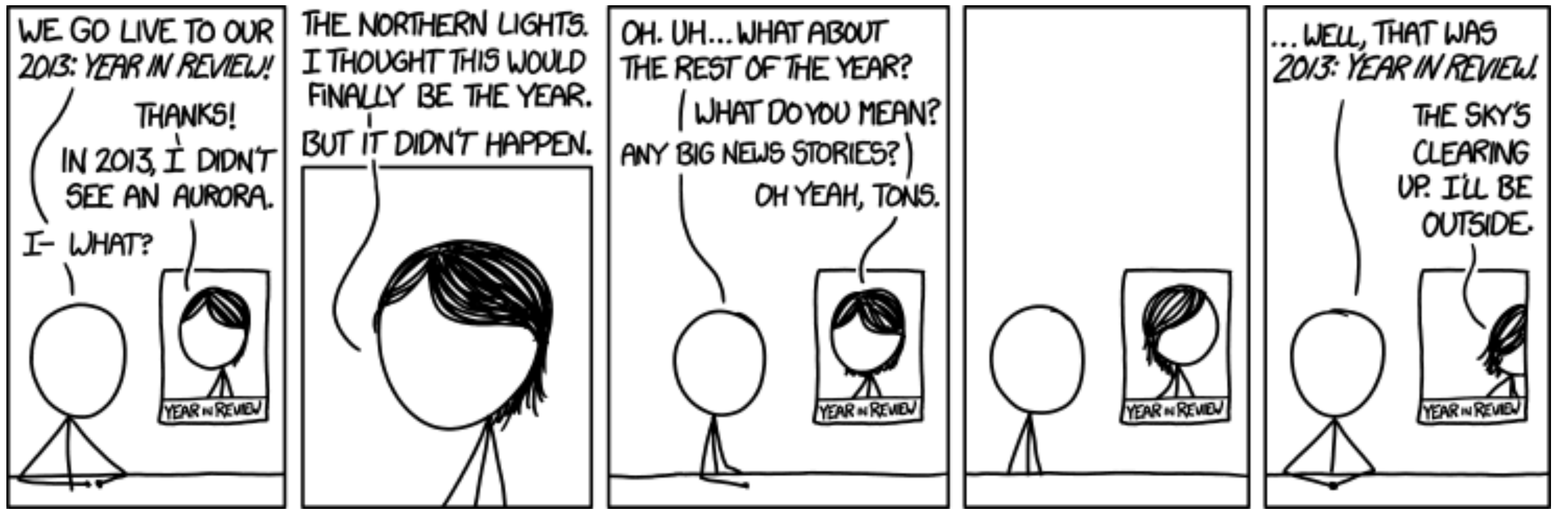
THE UNIVERSITY OF UTAH



[xkcd]

Best Projects

The Process

Each TA nominates 4-5 of her/his projects

All TAs meet, watch all videos, play with all tools, and discuss which ones get a nomination

Top two:

Each TA casts a votes towards his favorite two projects

The Results

A first and a second place!

- Chocolate for everyone + 120% of points

4 Runner-Ups

110% of points

For all: listed in “Hall of Fame” on website

The Runner-Ups

In no particular Order

IUCN Red List

Dart Risley, Jadon Wagstaff

https://jadonwagstaff.github.io/big_data/visualization.html

https://www.youtube.com/watch?v=YnMnD4rHfDQ

IAEA Reactors

Lucas Albright, Brittney Saenz, Brandon Kim

https://brandon2016.github.io/reactor.html

https://www.youtube.com/watch?v=A1gaIqxqT1M

Theme Park Queue Times

Tyler Jones, Spencer Purves

http://chromoquark.github.io/Queue-Time-Visualization

https://www.youtube.com/embed/3faDHiHk3qw

Insights in European League Soccer Transfers

Jiani Lin, Yi Ou

www.eng.utah.edu/~jianil/src/chord.html

https://www.youtube.com/watch?v=9Gq-jRlakQw

#2

840 Jobs

Matt Schroeder

https://matthewschroeder.github.io/840Jobs/840Jobs.html

https://www.youtube.com/watch?v=6owZNmu_kL8

#1

NBAstatsVIS

Qiuhua Sheng, Mengjiao Han, Qi Wu

https://www.youtube.com/watch?v=2Sve10FzTQg

https://wilsoncernwq.github.io/NBAstatsVIS/

Recap

Course Components

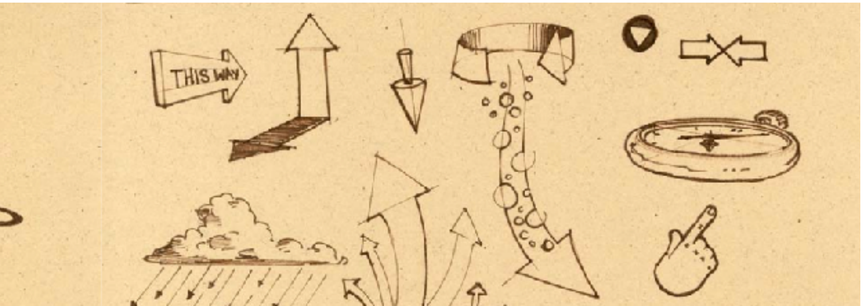
Lecture
Reading
Discussion

Theory

Design Lectures
Design Critiques
Exercises

Labs
D3 reading
Self-study
Office hours

Design Skills ⟷ Coding Skills

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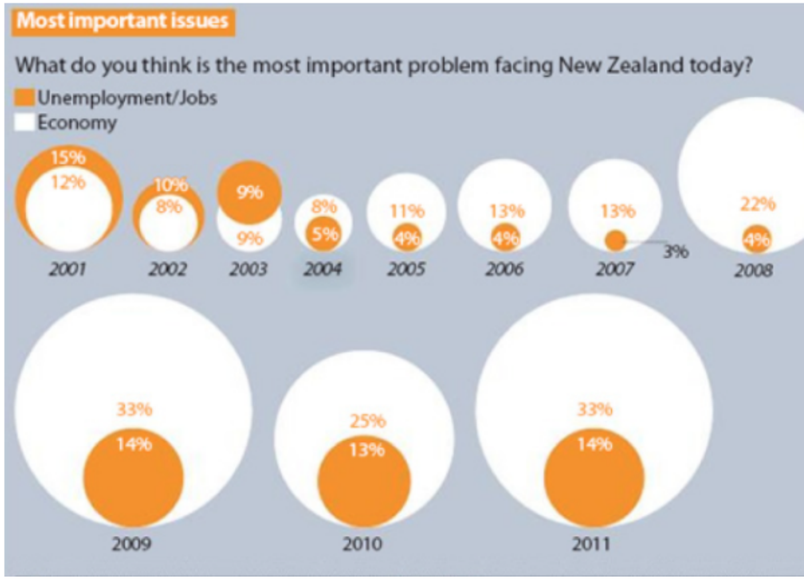
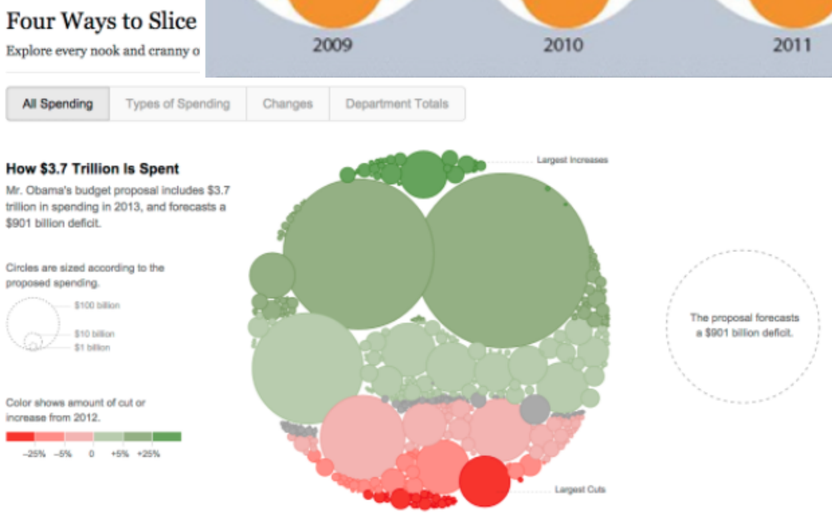
text {
  font: 10px sans-serif;
}

</style>
<body>
<script src="http://d3js.org/d3.v3.min.js"></script>
<script>
```

What is a good visualization?

Design Critiques and Redesigns





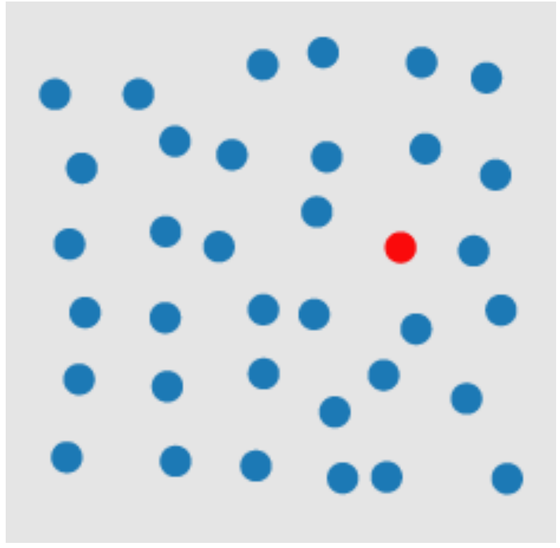
Programming

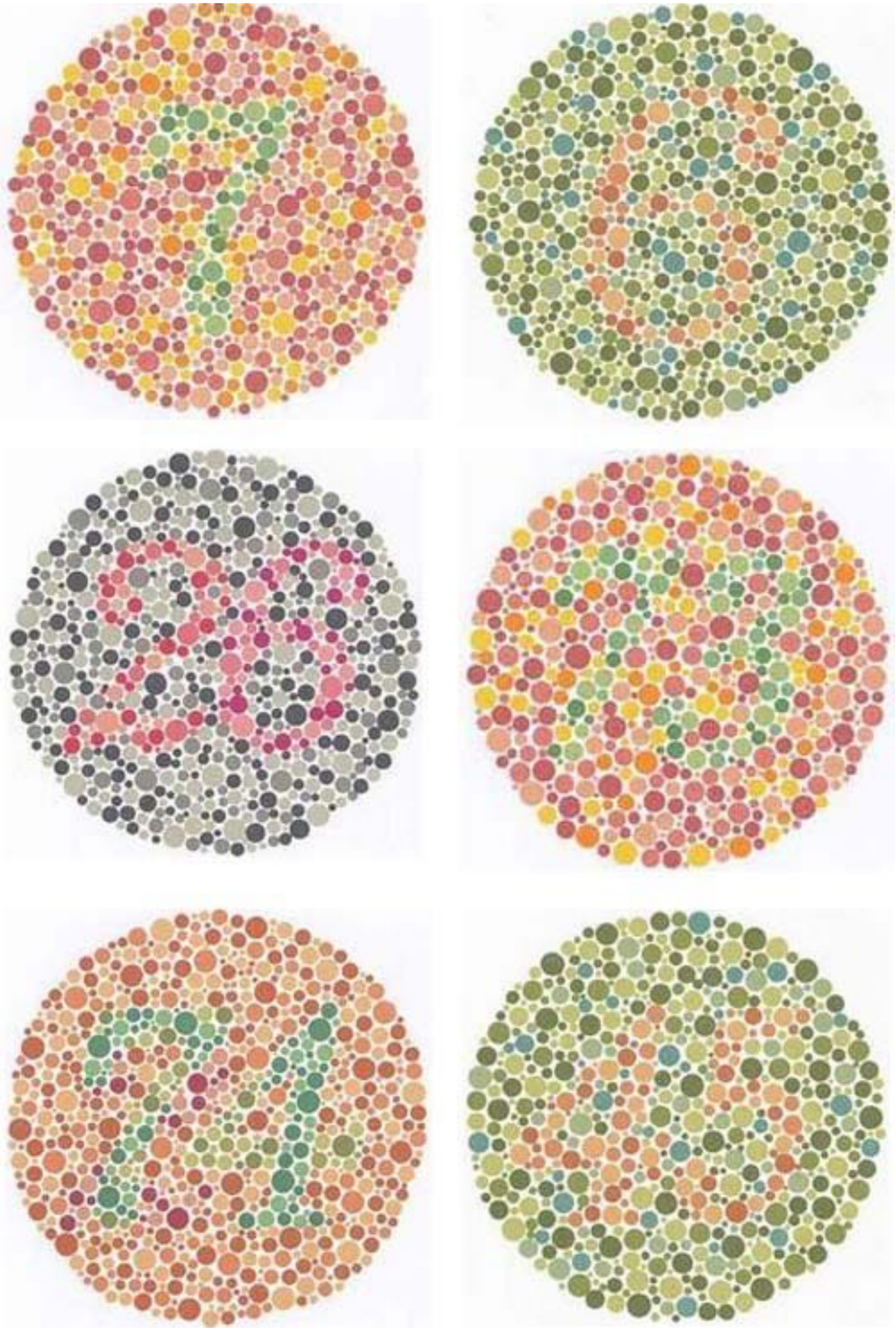
HTML

JS

Data-Driven Documents

Perception

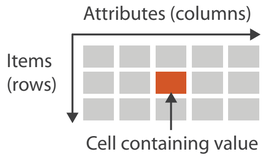




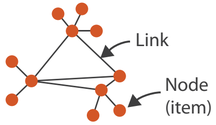
Data, Marks & Channels

Dataset Types

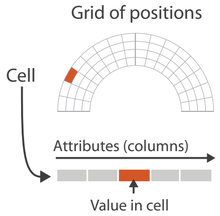
Tables



Networks

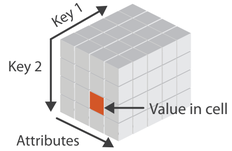


Fields (Continuous)



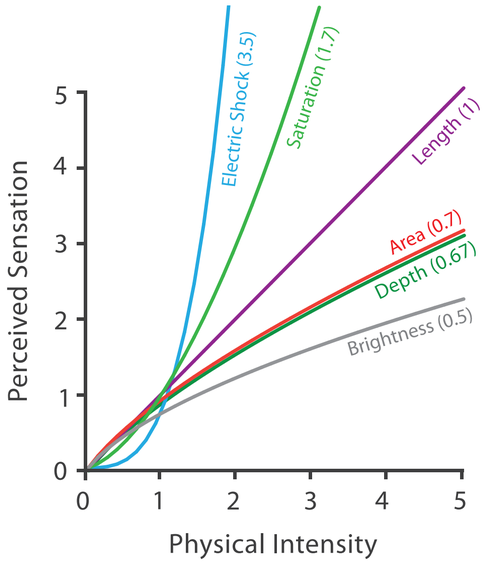
Geometry (Spatial)

Multidimensional Table



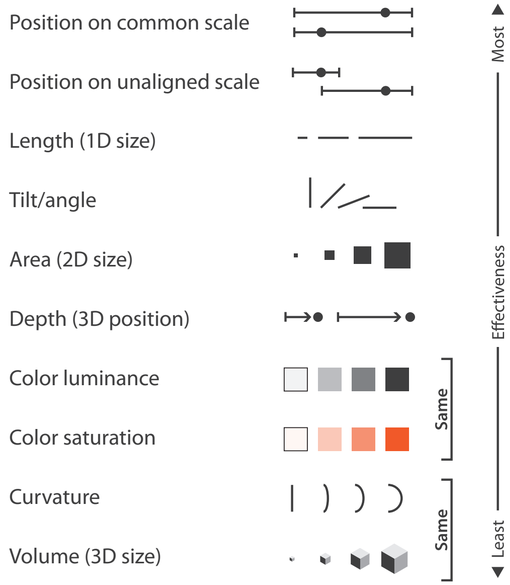
Trees

Steven's Psychophysical Power Law: $S = I^N$

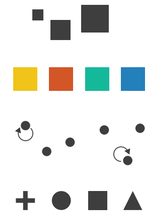


Channels: Expressiveness Types and Effectiveness Ranks

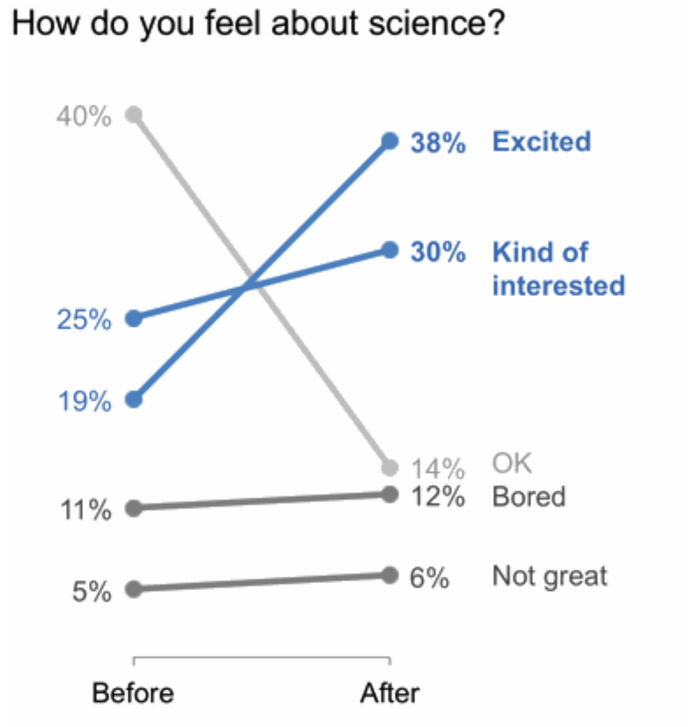
Magnitude Channels: Ordered Attributes

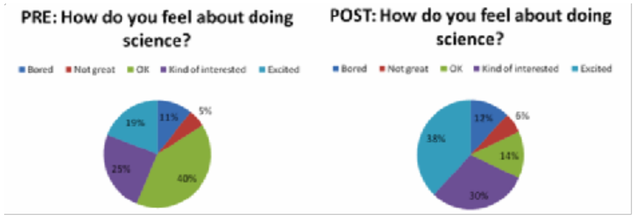


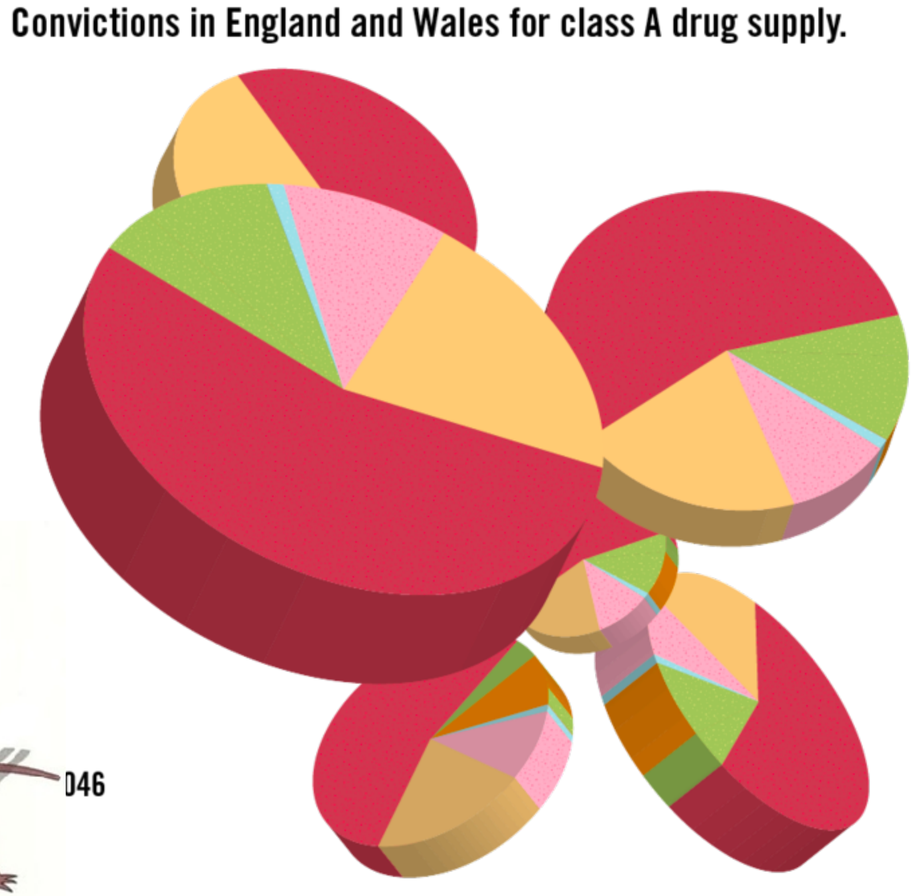
Identity Channels: Categorical Attributes

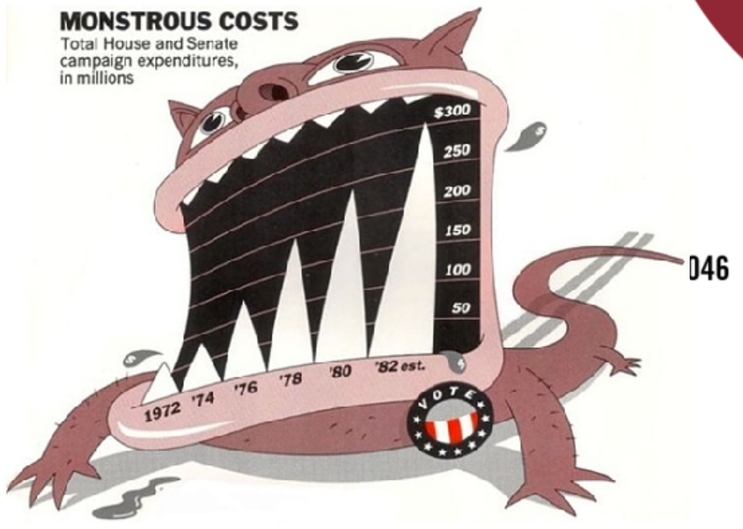


Design Guidelines

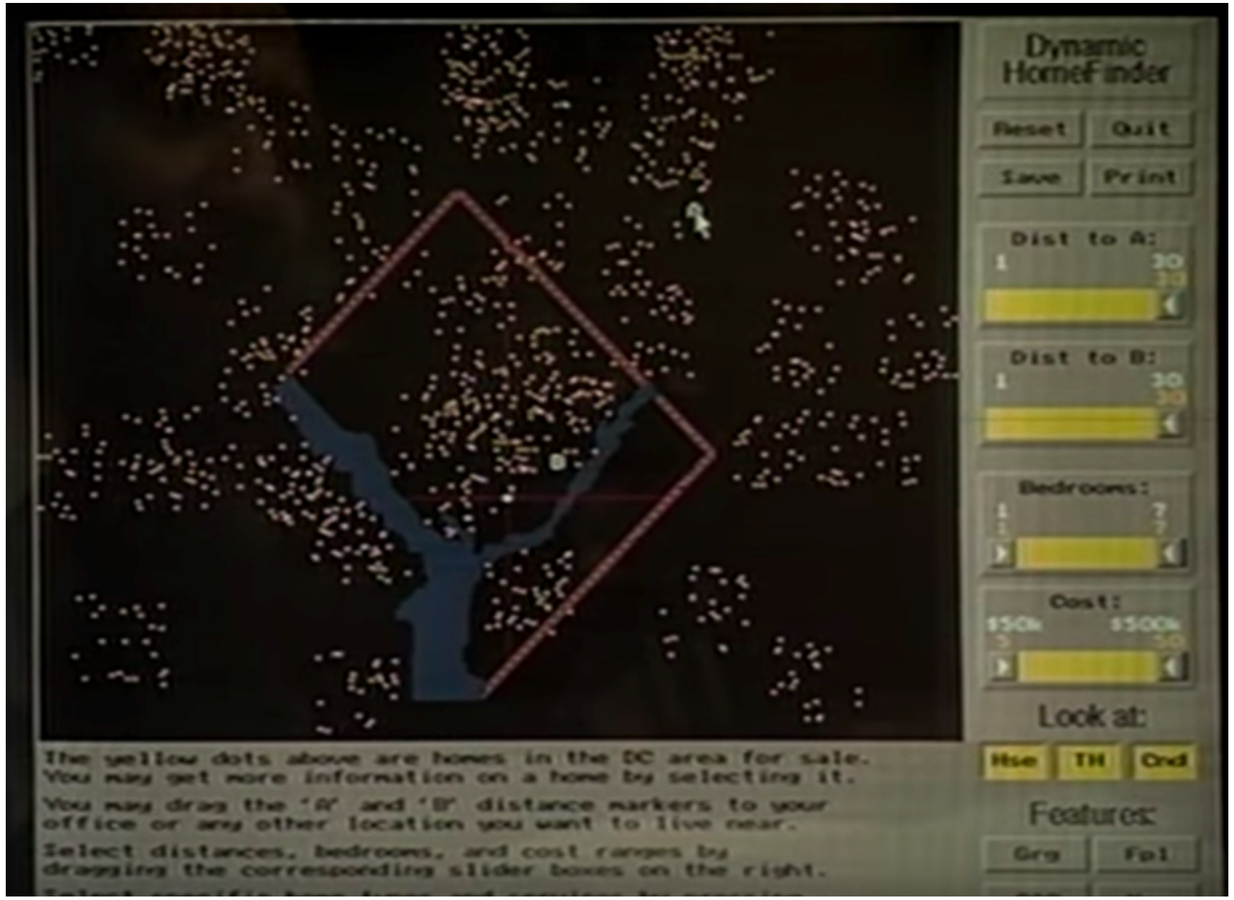


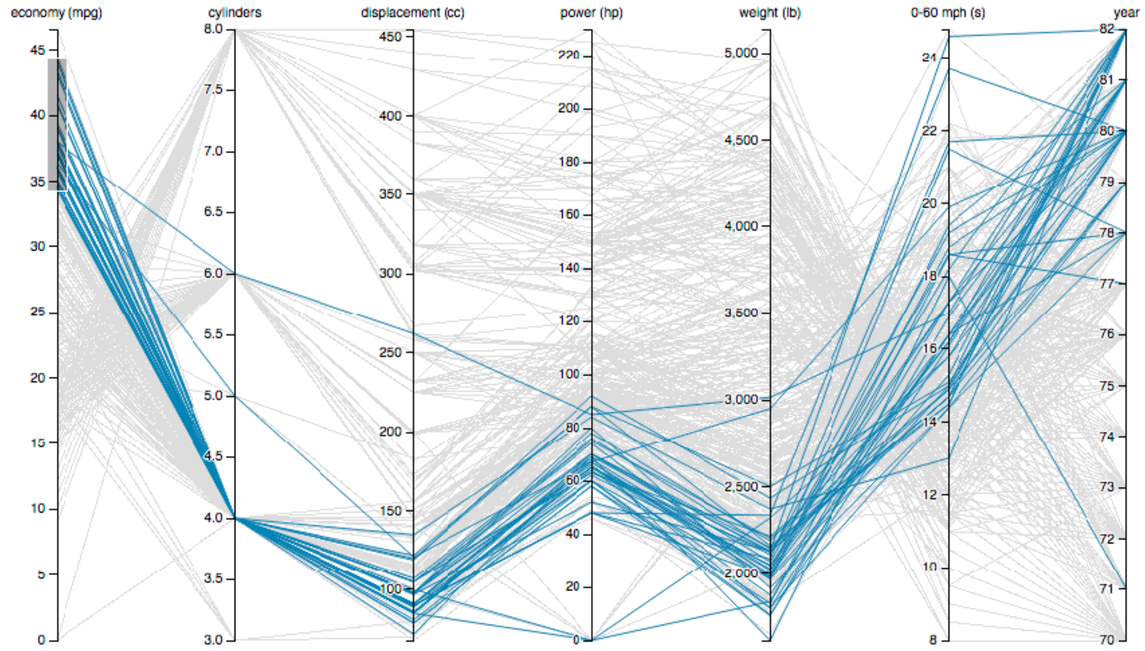






Interaction





MidTerm Relevant

Views

Multiple Views

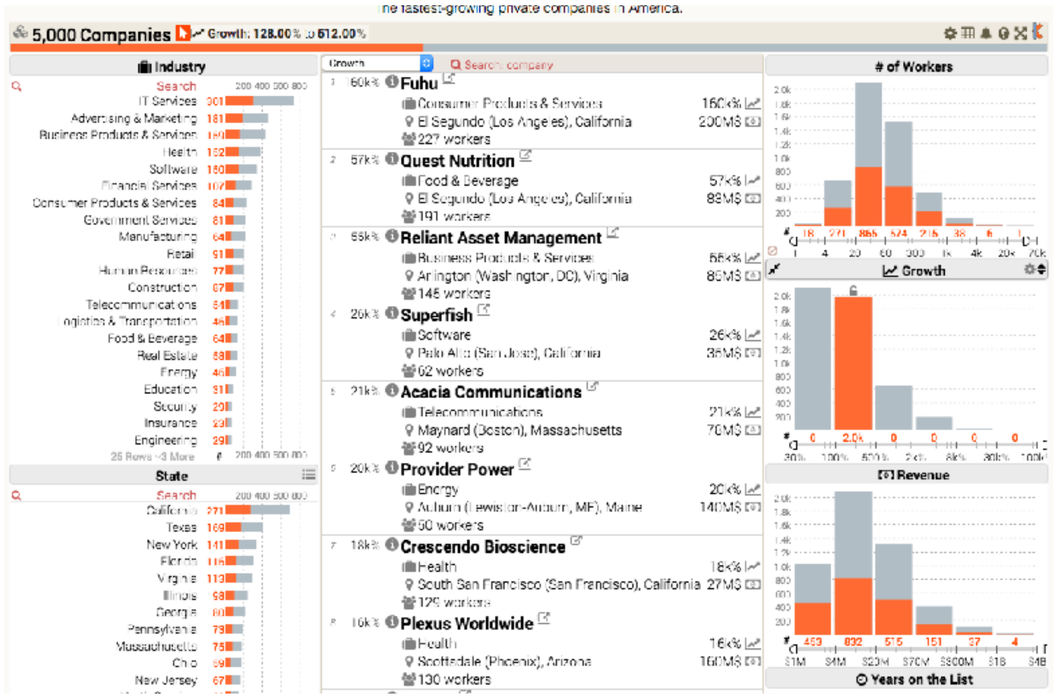
Linked Highlighting

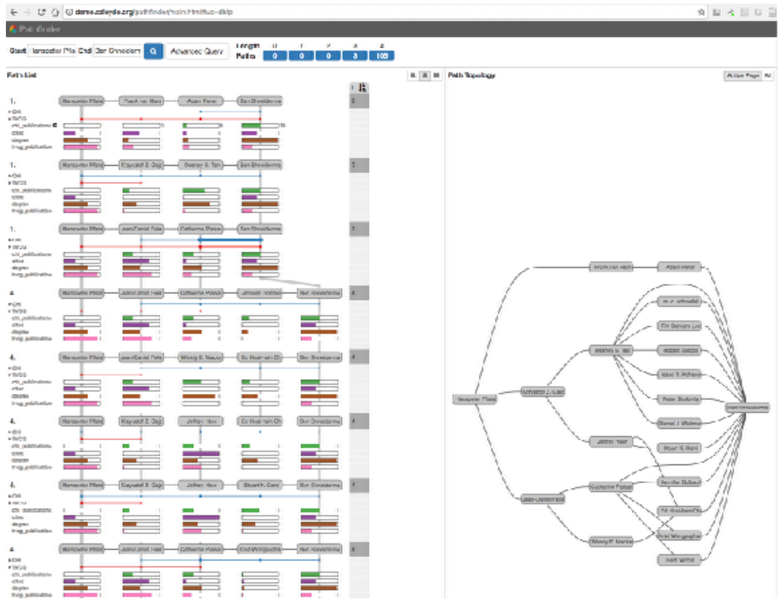
Same Data Different View

Different Data

Small Multiples

Partitioning



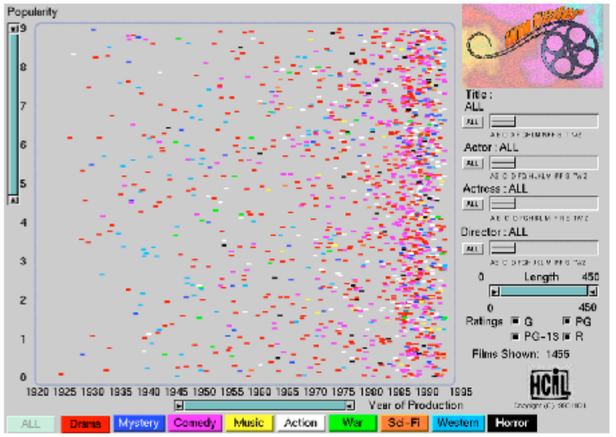


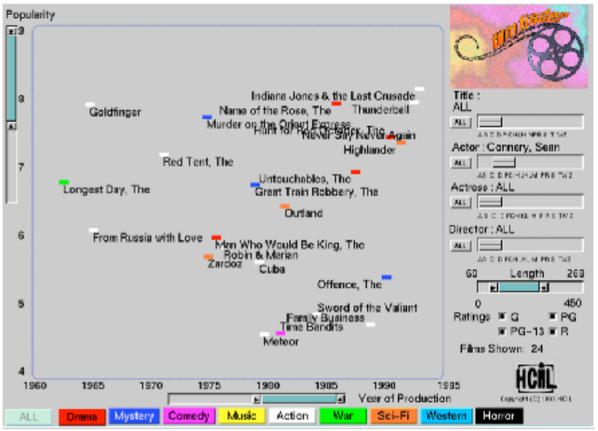
Filter & Aggregate

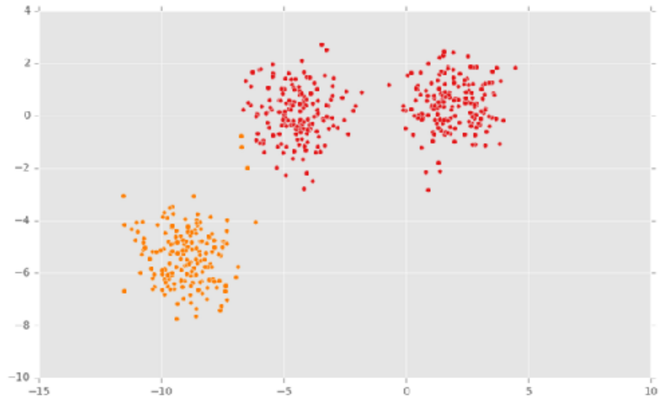
Eliminate Uniteresting Items

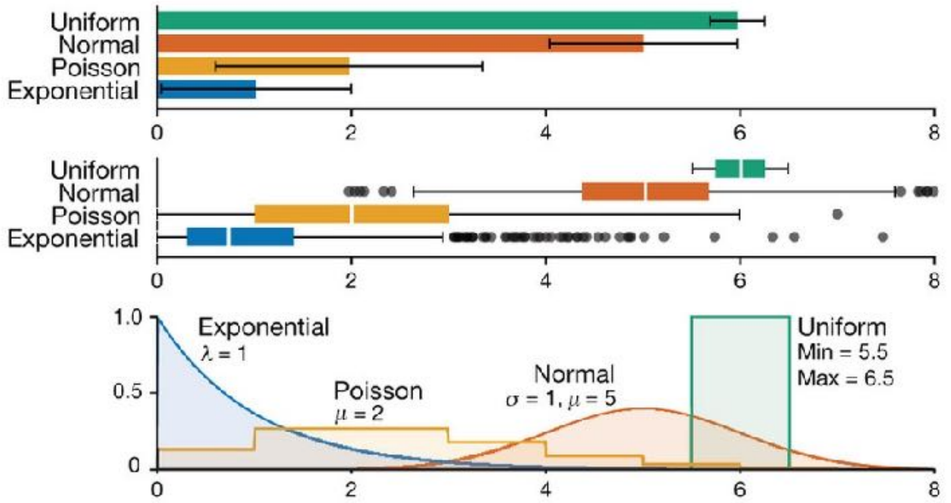
Group similar items

Clustering

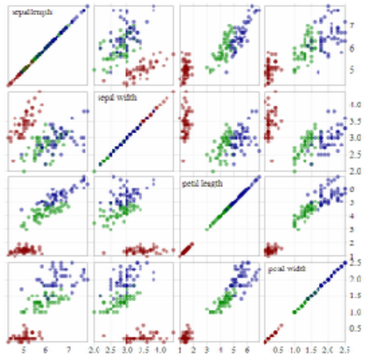




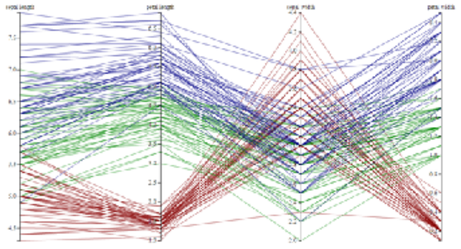




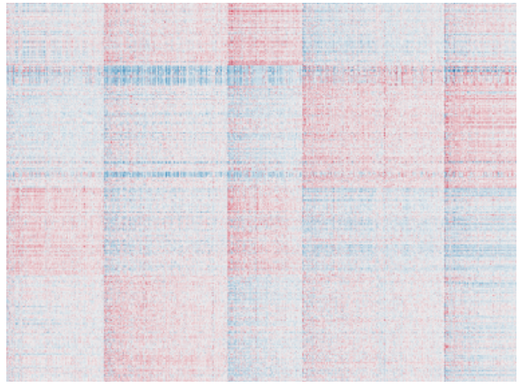
Tables



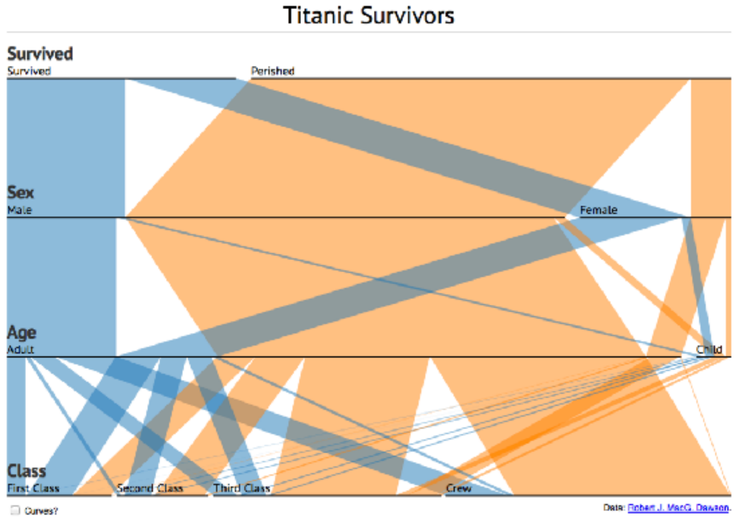
Scatterplot Matrices
[Bostock]



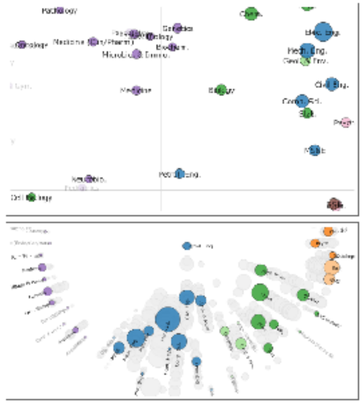
Parallel Coordinates
[Bostock]



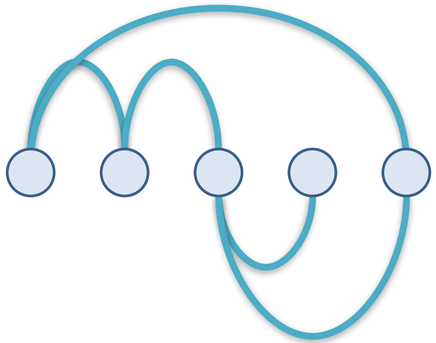
Pixel-based visualizations / heat maps



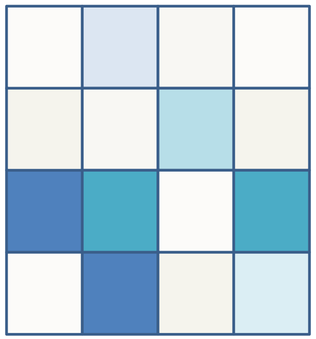
Multidimensional Scaling
[Doerk 2011]



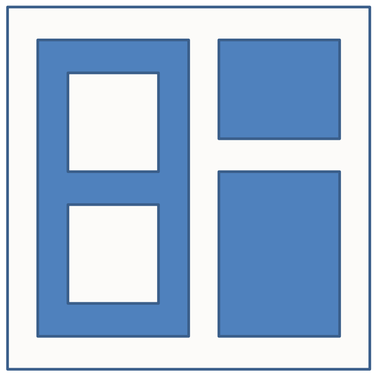
Graphs



Explicit
(Node-Link)

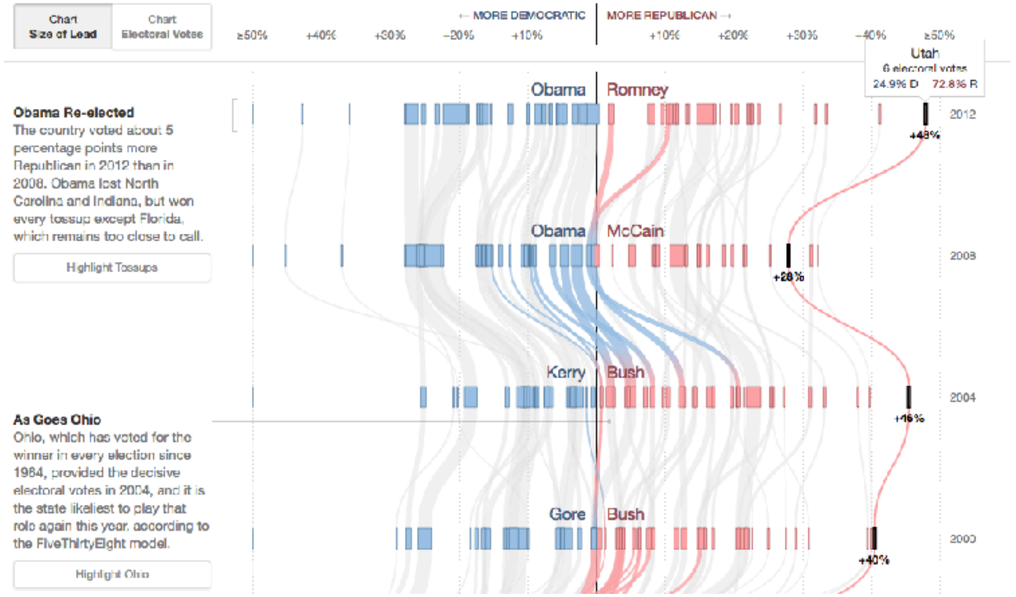


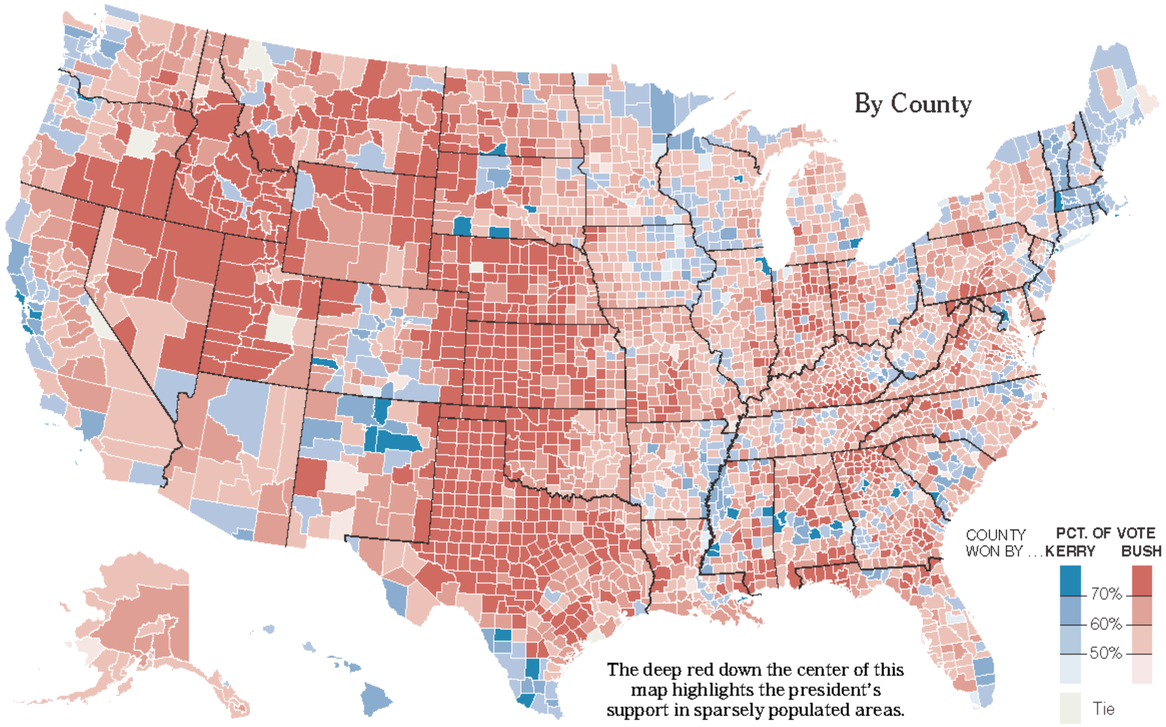
Matrix

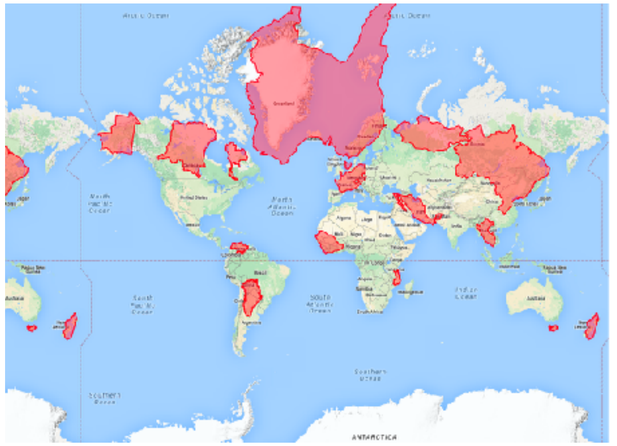


Implicit

Geospatial VIS





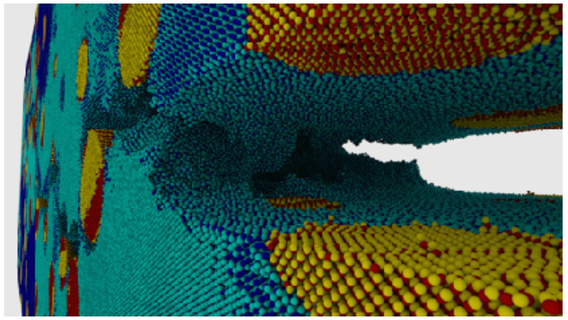


Scientific Visualization

Scanned Data

Computational Data

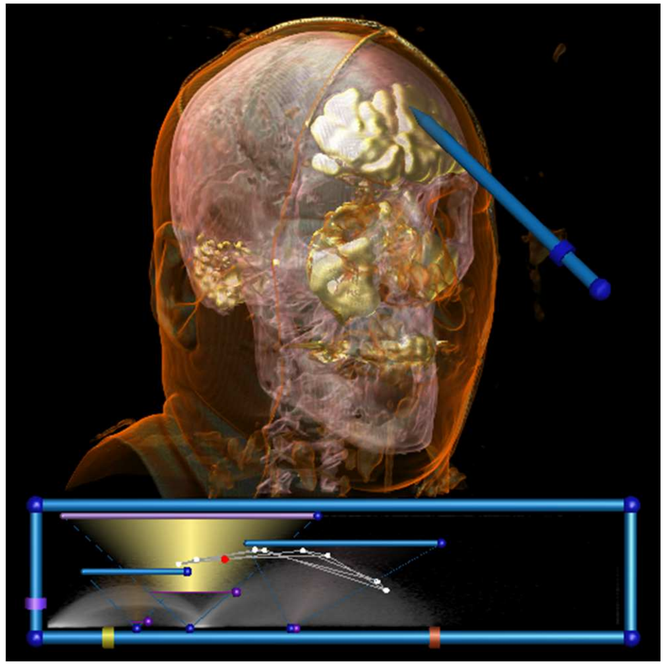
Structured & Unstructured Grids

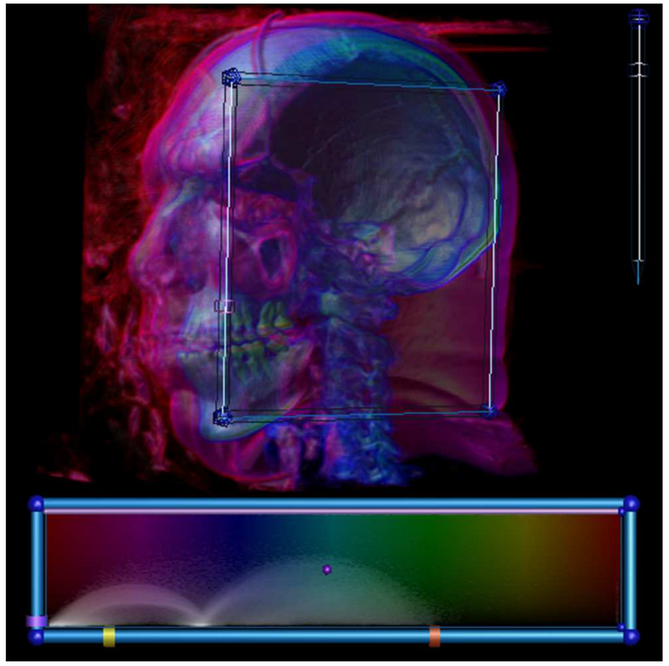


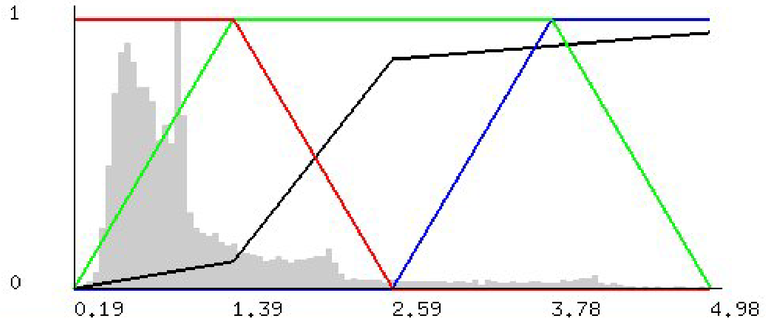
Volume Rendering

Ray Casting

Transfer Functions



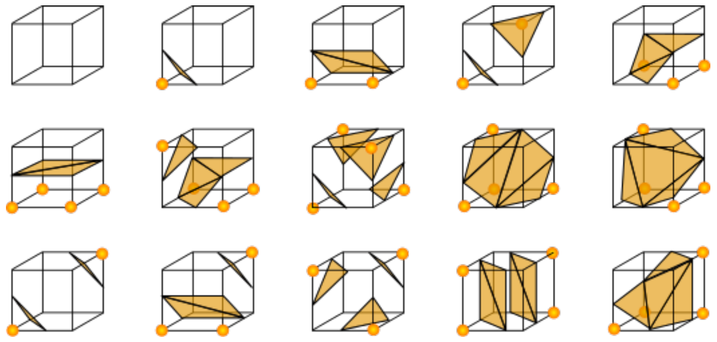


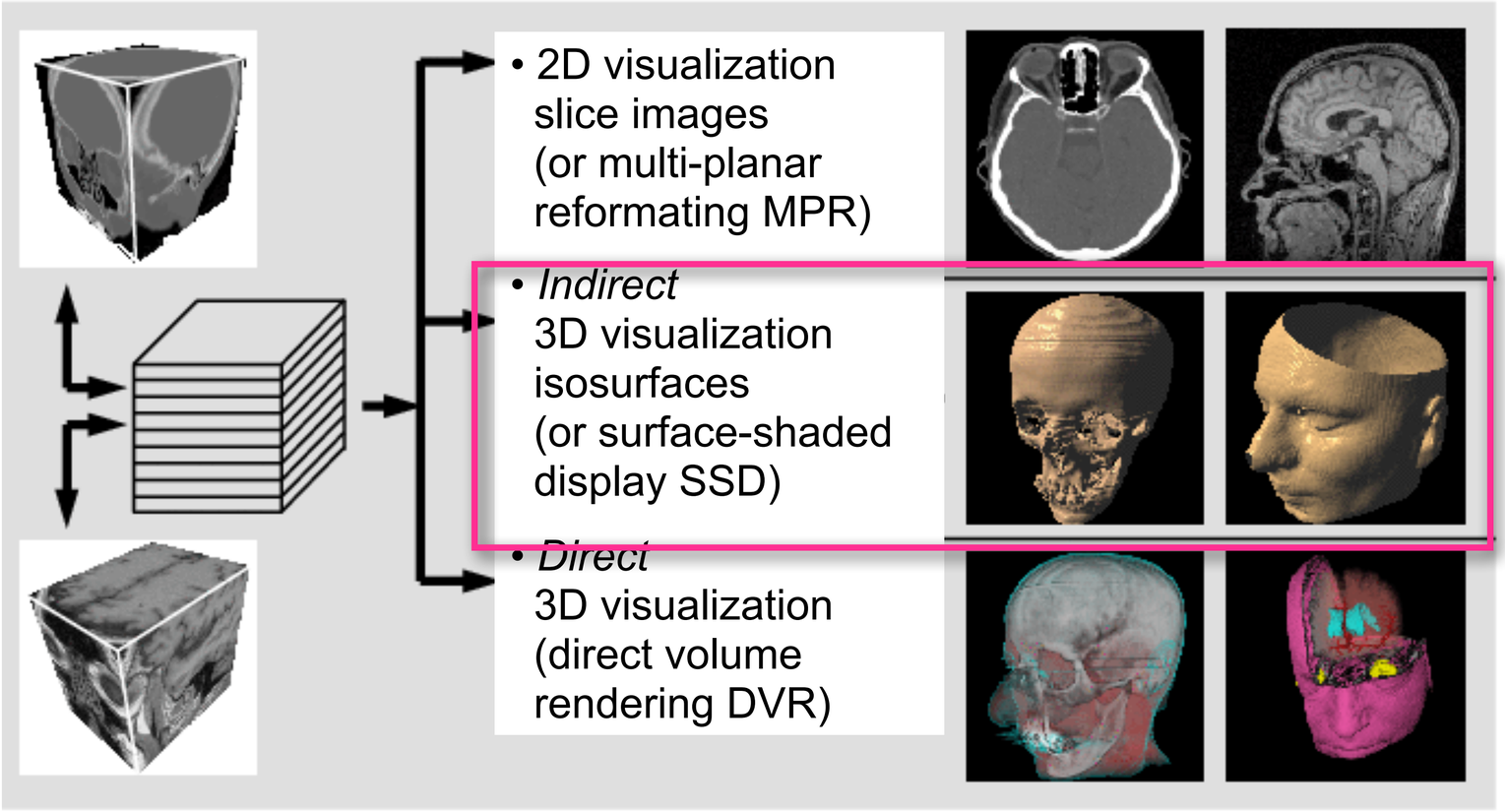


Isosurfaces

Direct vs Indirect Visualization

Marching Cubes





Vectors, Tensors, Flow

vector field on surface
(often called 2.5D)

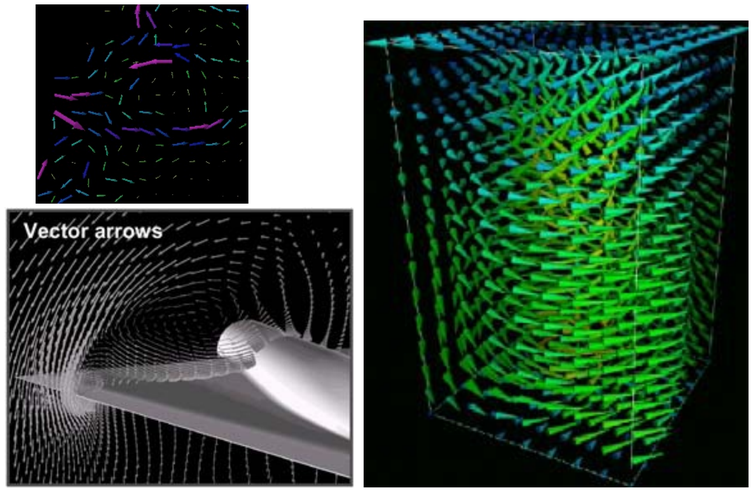
Curves

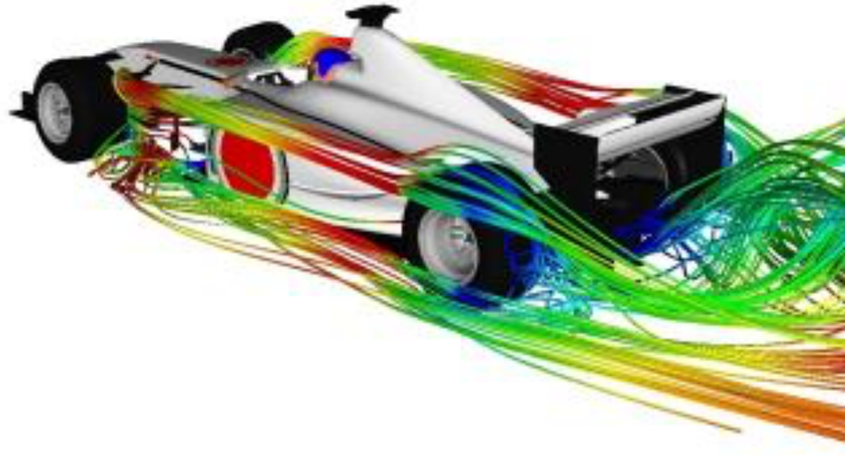
Streamlines (tangents), Pathlines (time), …

Line Integral Convolution

Direct + Geometry Based (Glyphs)

…





Opportunities

Classes & Other Opportunities

Visualization Seminar - CS 7942

Human-Centered Computing Seminar - CS 7940

Advanced Research Methods for Visualization - CS 7962

Independent Study in VDL:

http://vdl.sci.utah.edu/

VIS 2017, October, Phoenix

CHI 2017, May, Denver

Data Science Day @ Utah

Friday. Jan 13, 2017

Data Science Day welcomes all students, staff, and faculty at the University of Utah to present a poster or demo at the Utah Data Science Day 2017.

Consider presenting your class projects!

http://datascience.utah.edu/dataday/

Data Science Job Fair

Welcome: Data Science at Utah

Panel: Data Science in Industry

Posters and Demos

Data Science + X Talks

Keynote

Poster Awards !!

Feedback

Feedback Please!

Were your expectations met?

What else would you have liked to learn about?

Did you feel prepared? Are the prerequisites appropriate?

Was it too much work? Was it too easy?

Too little programming? Too much programming?

Did you like JS/D3?

Did you enjoy the project?

Course Evaluation

https://goo.gl/lbhkEr

Please Take 5 Min now to evaluate this course!

Evaluations are important for us to improve the course and our teaching!

Thanks!

To you for participating and coming to lectures!

To Aaron an Janet for their guest lectures!

To our TAs Carolina, Vinitha, Yogesh!

See you next week for project presentations!