Information Visualization Highlights

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http://www.cs.ubc.ca/~tmm/talks.html#ubcresearch15

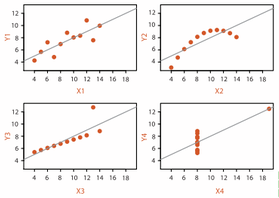
Defining visualization (vis)

Computer-based visualization systems provide visual representations of datasets designed to help people carry out tasks more effectively.

Visualization is suitable when there is a need to augment human capabilities rather than replace people with computational decision-making methods.

Anscombe's Quartet

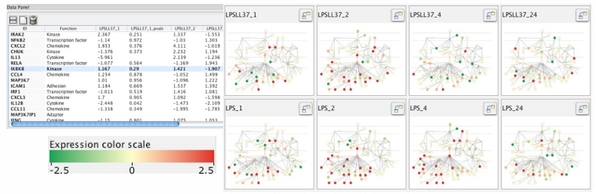
Identical statistics	
x mean	9
x variance	10
y mean	8
y variance	4
x/y correlation	1



Why use an external representation?

Computer-based visualization systems provide visual representations of datasets designed to help people carry out tasks more effectively.

- replace cognition with perception



[Cerebral: Visualizing Multiple Experimental Conditions on a Graph with Biological Context. Barsky, Munzner, Gardy, and Kincaid. IEEE TVCG (Proc. InfoVis) 14(6):1253-1260, 2008.]

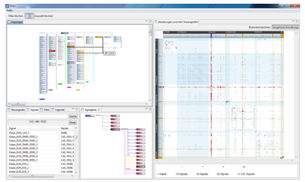
Problem-driven vis: Many domains

collaboration w/ SFU Fisheries

Vismon: fisheries management

http://youtu.be/h0kHoS4VYmk excerpt: 0:00-2:53

collaboration w/ BMW

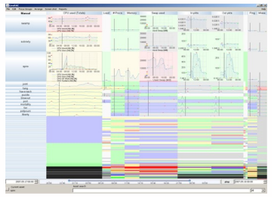


RelEx: in-car overlay networks

http://youtu.be/89lsQXc6Ao4 excerpt: 0:00-2:00

Problem-driven vis: Many domains

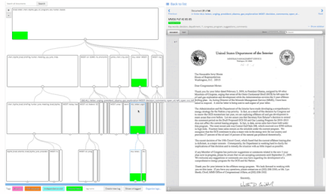
collaboration w/ AT&T (managed web hosting)



LiveRAC: system management time-series

http://youtu.be/ld0c3H0VSkw

collaboration w/ Associated Press

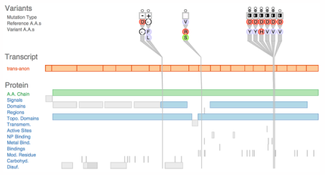


Overview: investigative journalism

http://vimeo.com/71483614

Problem-driven vis: Many domains

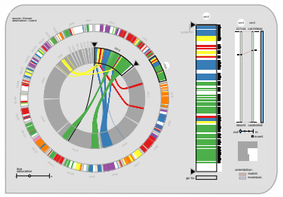
collaboration w/ BC Cancer



Variant View: genomics

http://youtu.be/AHDnv_gMXxQ

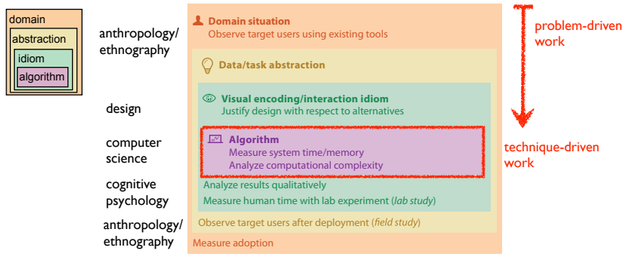
collaboration w/ Broad (Harvard Med, MIT)



MizBee: genomics

http://youtu.be/86p7brwuz2g excerpt: 0:00-1:15

Four levels of design: Validation methods from different fields



[A Nested Model of Visualization Design and Validation. Munzner. IEEE TVCG 15(6):921-928, 2009 (Proc. InfoVis 2009).]

More Information

- book
  http://www.cs.ubc.ca/~tmm/vadbook
  – 20% promo code for book+ebook combo: HVN17
  – http://www.crcpress.com/product/isbn/9781466508910
- papers, videos, software, talks, courses
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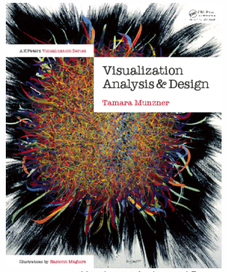
  http://www.cs.ubc.ca/~tmm
- this talk
  http://www.cs.ubc.ca/~tmm/talks.html#ubcresearch15



Visualization Analysis and Design. *Munzner. CRC Press, 2014.*