Information Visualization

Intro, Time Series Exercise

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http://www.cs.ubc.ca/~tmm/courses/547-20
Welcome!
This week

• async read
  – VAD Chapter 1
  – Course Logistics

• async discuss
  – self-intros (light load this week)

• sync (now!)
  – logistics Q&A
  – scholar strike, in brief
  – time series exercise
    • small groups via zoom breakout
    • technology pilot, first time for online version of class!
Course Logistics Q&A
Scholar Strike
Scholar Strike

• speaking out
  – against police brutality
  – in support of Black Lives Matter

• inclusion, diversity, equity, & ethics
  – in this course
    • respectful and inclusive learning setting
  – in field of visualization
    • diversity and inclusion for participation within field
    • visualization as mechanism to inform and promote change
    • ethics of data use
Readings and resources

• Data Visualization Society & Nightingale Journal
  – Resources, including Data Sources for Analysis of Racial Bias
    https://www.datavisualizationsociety.com/resources
  – 6-part article series on pioneering work of W.E.B. duBois
    https://medium.com/nightingale/w-e-b-du-bois-staggering-data-visualizations-are-as-powerful-today-as-they-were-in-1900-64752c472ae4

• Data Feminism book
  – data science and data ethics, informed by intersectional feminism
    https://datafeminism.io/

• Designing for People initiative (dfp.ubc.ca) events (videos coming soon)
  – ethics in tech & data use seminar yesterday
    https://dfp.ubc.ca/news-and-events/events/three-lessons-towards-ethical-tech-research-ethics-ethics-education-and
  – two EDI workshops https://dfp.ubc.ca/news-and-events/events/edi-workshop
Exercise: Time Series
Now: In-class design exercise, in small groups

• Five time-series scenarios
  – 1: every 5 min, duration 1 year, 1 thing: building occupancy rates
  – 2: every 5 min, 1 year, 2 things: currency values (2 exchange rate)
  – 3: several years and several things: every 5 min, 5 years, 10 currencies
  – 4: many things: every 5 min, 1 year, CPU load across 1000 machines
  – 5: several parameters, many things: every 5 min, 1 year, 10 params on 1000 machines

• Small-group exercise: 20-25 min
  – one group per Zoom breakout (4 people/group)
  – brainstorm possible visual encodings & interactions for your assigned scenario
  – document in your group's googledoc w/ text & sketch images

• Reportback: 30-40 min
  – flip through googledocs, sometimes questions for group spokesperson

• Design space examples/discussion: 15-20 min
Case 1: 3D Approach (Not Recommended)

- extruded curves: detailed comparisons impossible

[Cluster and Calendar based Visualization of Time Series Data. van Wijk and van Selow, Proc. InfoVis 99.]
Case 1: Cluster-Calendar Solution

- derived data: cluster hierarchy
- juxtapose multiple views: calendar, superimposed 2D curves
Case 2: Stack Zooming


https://youtu.be/dK0De4XPm5Y
Case 3: ChronoLenses


https://youtu.be/k7pl8ikczqk
Case 4: RankExplorer


https://youtu.be/rdgn1qcZ2A4
Case 5: LiveRAC video

http://youtu.be/ld0c3H0VSkw

Next Time

• to read
  – VAD book, Ch 2: What: Data Abstraction
  – VAD book, Ch 3: Why: Task Abstraction
  – paper: Nested Model