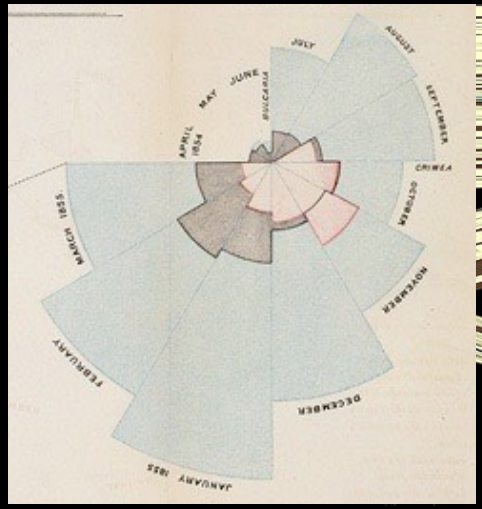
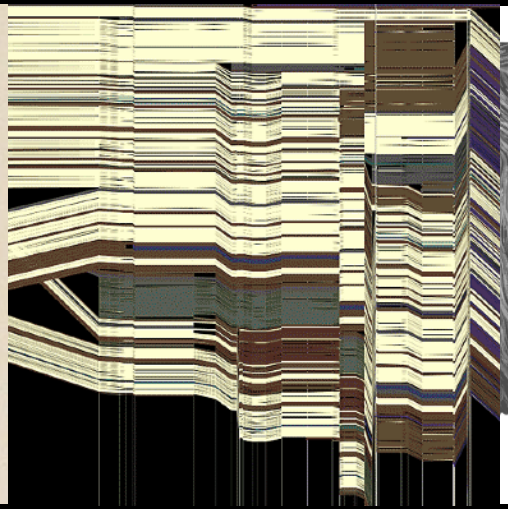
CSE 442 - Data Visualization

Final Project





Jeffrey Heer University of Washington

Final Project

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Produce an **explorable visual explanation**

Initial **prototype** and **design review**

Final deliverables and **video presentation**

Submit and **publish online** (GitLab)

Projects from **previous classes** have been:

- Published as research papers
- Shared widely (some in the New York Times!)
- Released as successful open source projects

Final Project Theme

Explorable Explanations

Goal: produce an interactive web page that explains a complex subject to the reader.

The topic could be a scientific phenomenon, a computer science algorithm, a mathematical concept, a sociological theory, or another topic that you're passionate about.

Focus on creating one or more interactive diagrams interlinked with explanatory text or annotations. We urge you to focus on a highly visual, interactive experience. Do not expect a viewer to read large amounts of article text.

Final Project Schedule

Proposal	Fri Feb 20
Prototype	Wed Mar 4
Demo Video	Wed Mar 11
Video Showcase	Thu Mar 12 (in class)
Deliverables	Mon Mar 16

Logistics

Final project description posted online

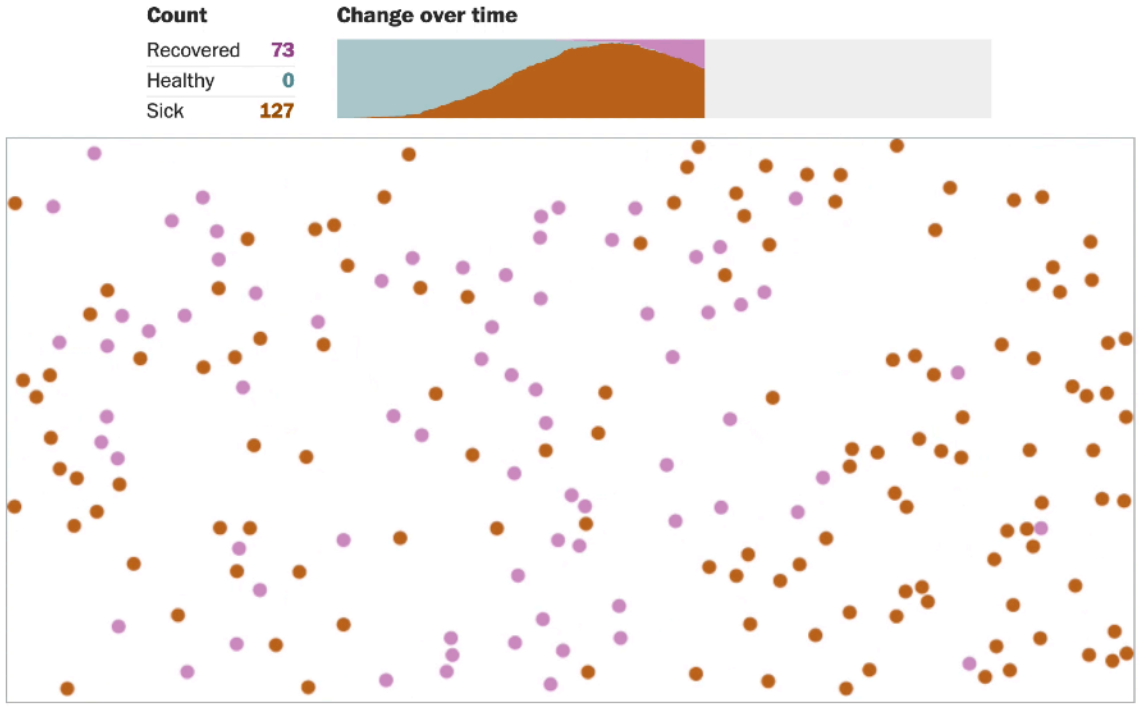
Work in groups of 1-3 (or 4 with permission)

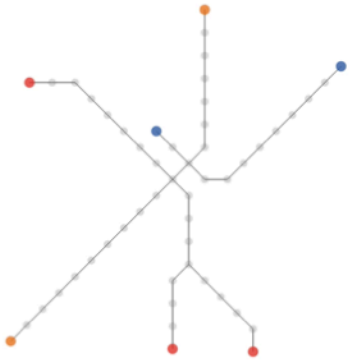
Start determining your project topic!

Inspiration...

Why outbreaks like coronavirus spread exponentially, and how to "flatten the curve"

Harry Stevens, Washington Post 2020





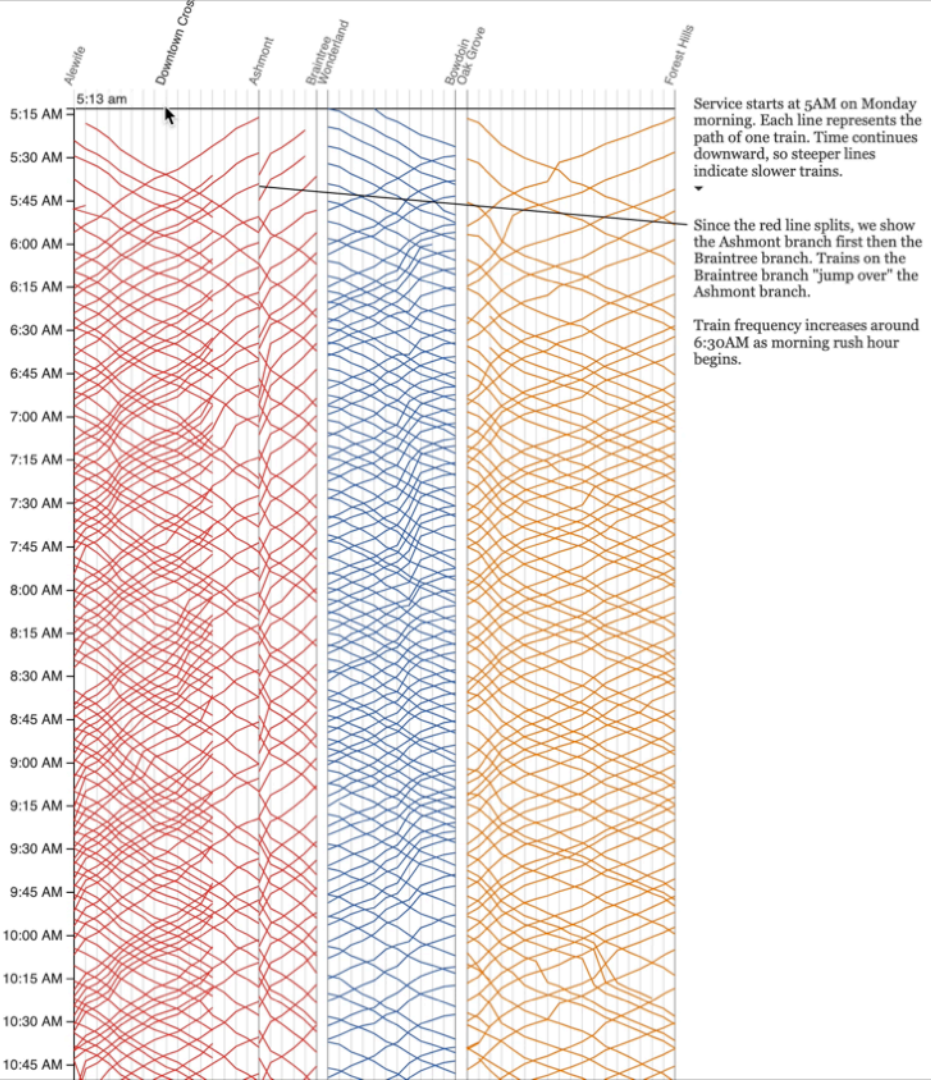
Locations of each train on the red, blue, and orange lines at 5:13 am. Hover over the diagram to the right to display trains at a different time.

Trains are on the right side of the track relative to the direction they are moving.

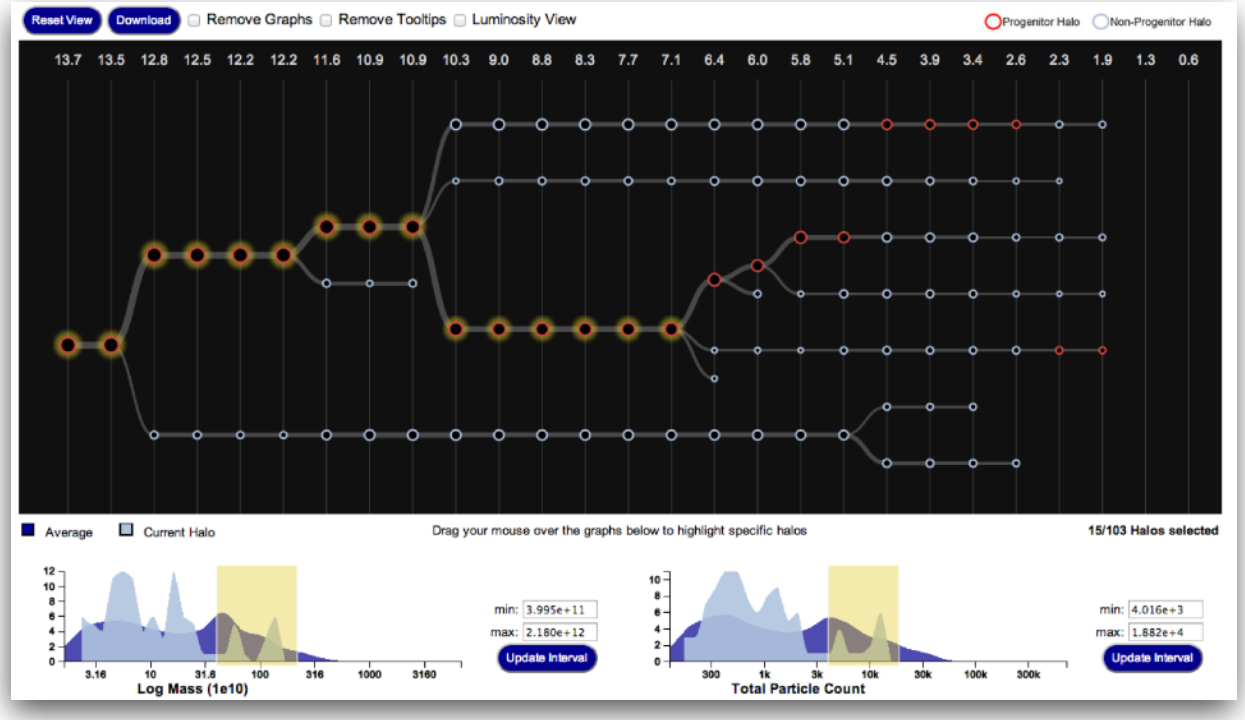
See the morning rush-hour, midday lull, afternoon rush-hour, and the evening lull.

MBTA Viz

Barry & Card

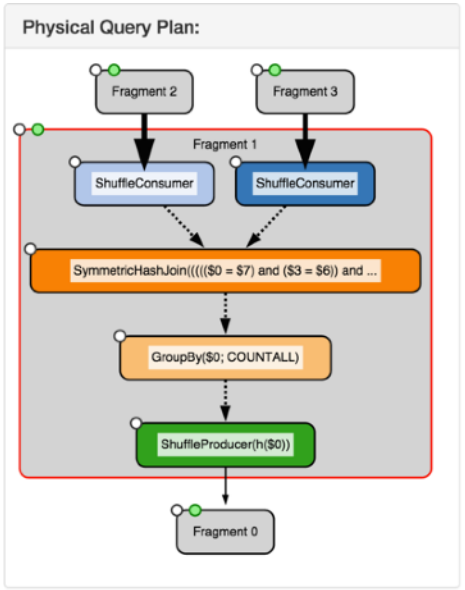


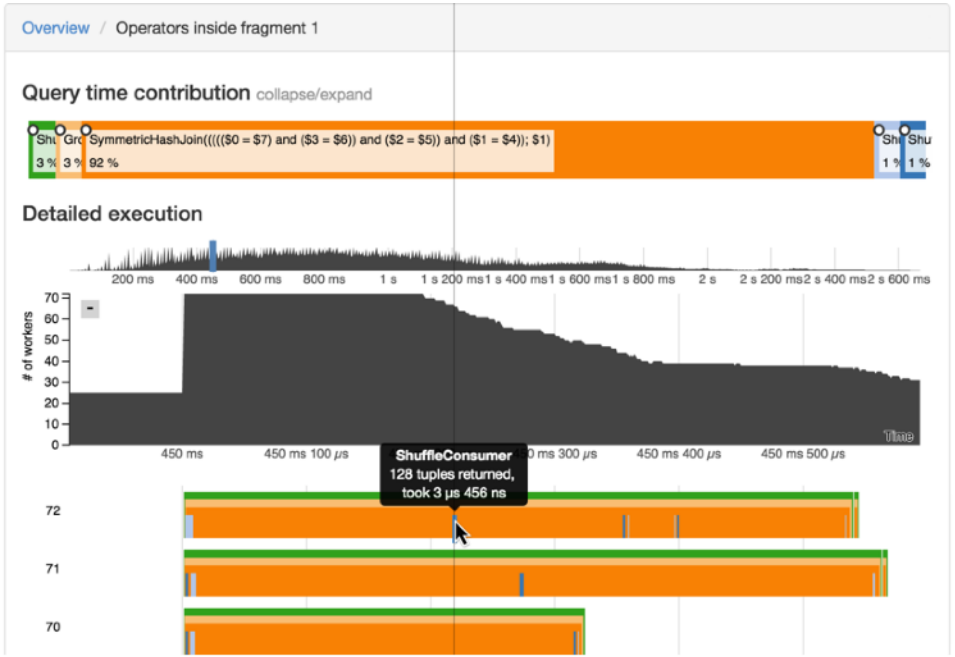
Visualizing Galaxy Merger Trees



S. Loebman, **J. Ortiz**, **L. Orr**, M. Balazinska, T. Quinn et al. [SIGMOD '14]

Perfopticon Distributed Query Performance





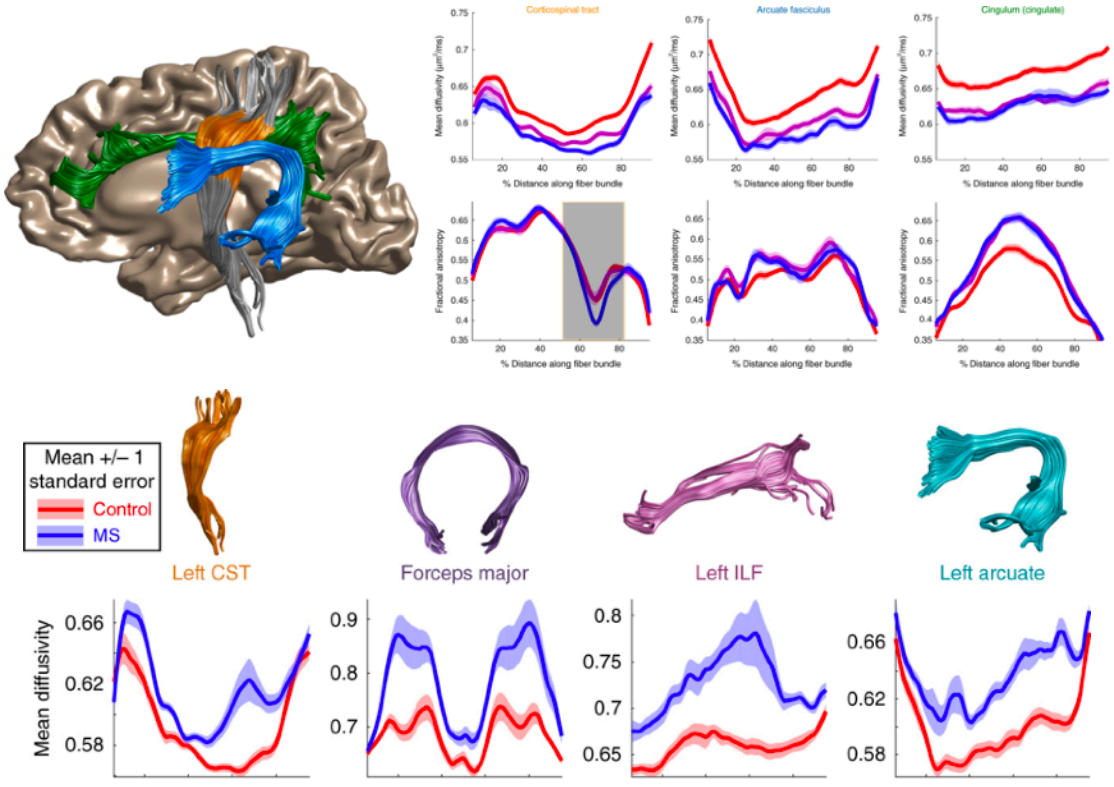
Dominik Moritz et al. [EuroVis '15]

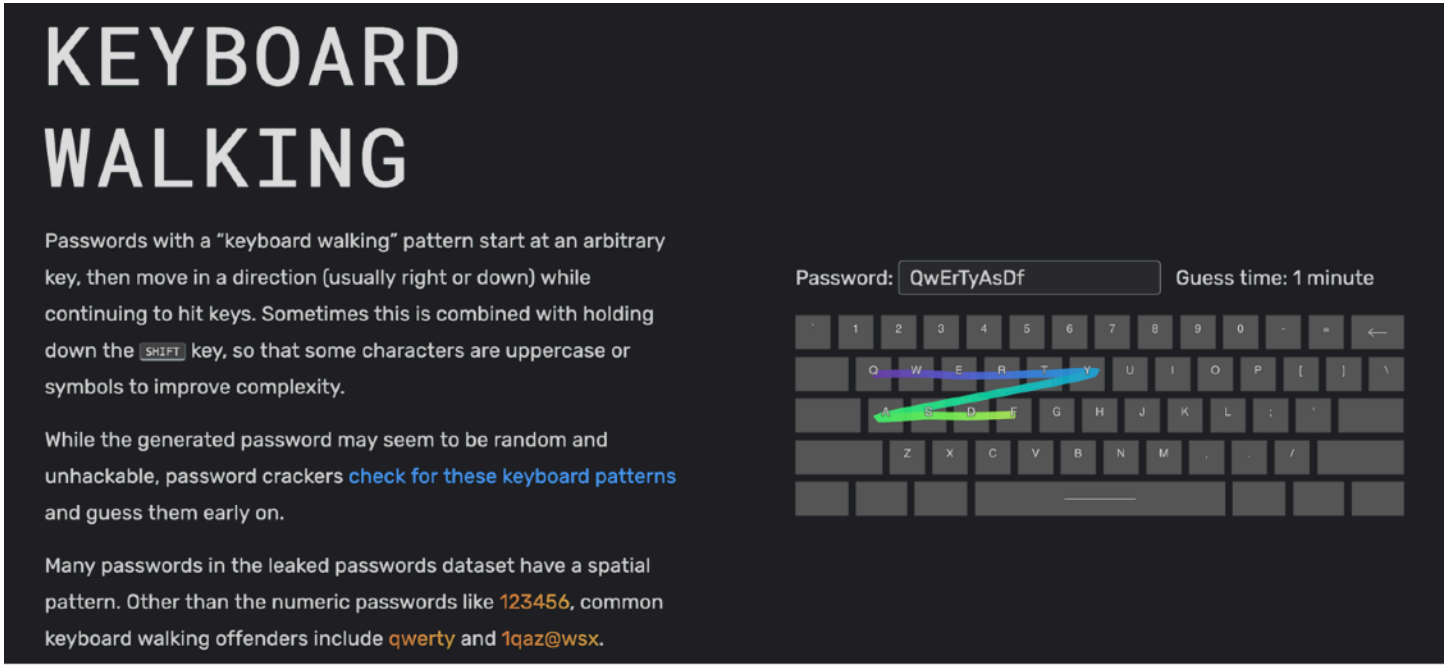
nature COMMUNICATIONS

Article | OPEN | Published: 05 March 2018

A browser-based tool for visualization and analysis of diffusion MRI data

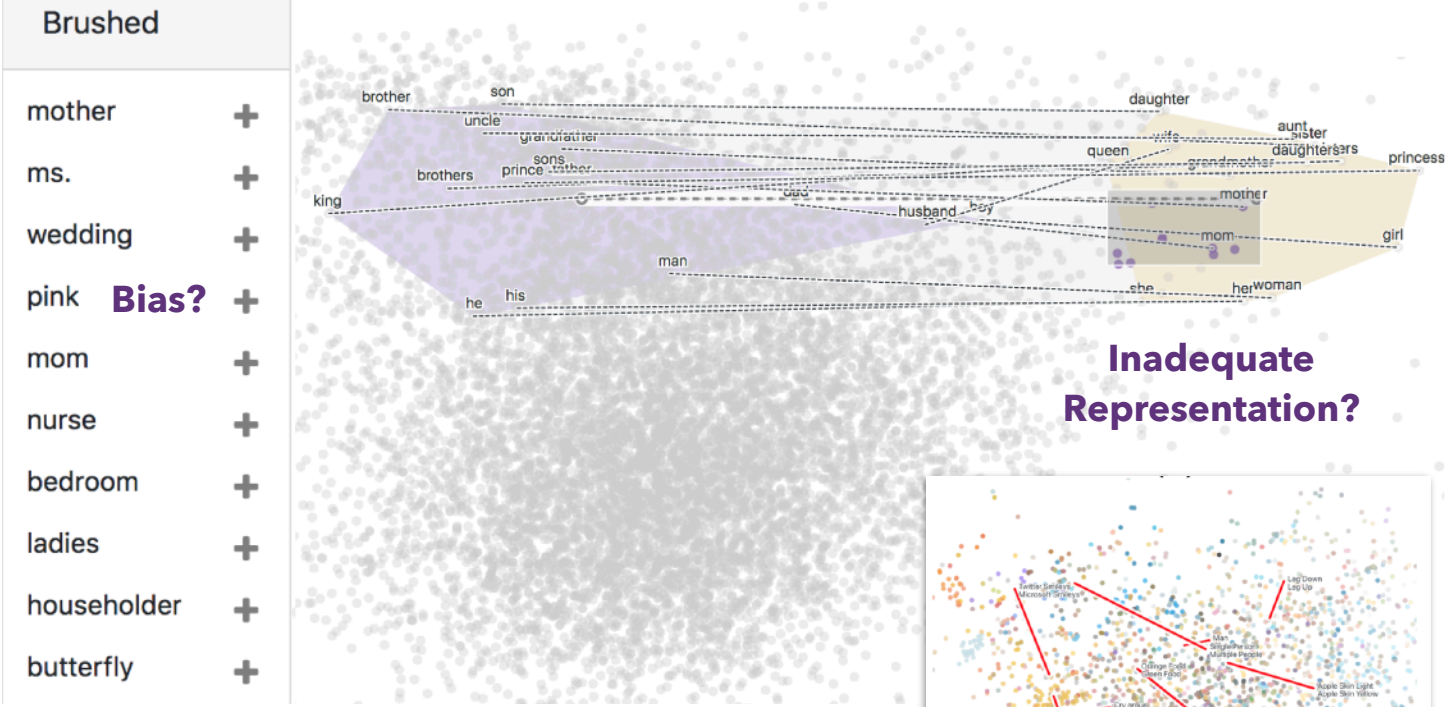
Jason D. Yeatman, Adam Richie-Halford, Josh K. Smith, Anisha Keshavan & Ariel Rokem





Semantic Passwords

Vishal Devireddy (CSE 512, Spring '21)



Latent Space Cartography

Visual Analysis of Vector Space Embeddings

Yang Liu, Eunice Jun, Qisheng Li (CSE 512, Spring '18)

Tips for a Successful Project

Focus on a compelling **real-world problem**.
How will you gauge success?

Consider **multiple design alternatives**.
Prototype quickly (use Tableau, R, *etc*…).

Seek feedback (representative users, peers, …).
Even informal usage can provide insights.

Choose **appropriate team roles**.

Start early (and read the suggested paper!)

Change Blindness

Change Blindness

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Change Blindness

[Example from Palmer 99, originally due to Rock]

Demonstrations

https://www2.psych.ubc.ca/~rensink/flicker/download/

http://www.youtube.com/watch?v=Ahg6qcgoay4