

lecture 01:

Communicating with Data

September 11, 2017



Instructor

Amelia McNamara

she/her

prefer to be called “Amelia” or
“Professor McNamara”

amcnamara@smith.edu

McConnell 211

Student hours:

Mondays 3:00-4:30 pm

Thursdays 10:00 am - noon

<http://www.science.smith.edu/~amcnamara/>

Course website

SDS 136 - Fall 2017

🏠 Syllabus

Schedule

Resources ▾

Syllabus

<https://smithcollege-sds.github.io/136/>

About the Course

Instructor

Amelia McNamara (amcnamara@smith.edu , McConnell 211) Student hours: Mondays from 3:00-4:30, Thursdays from 10:30-12:00, and by appointment, in McConnell 211.

Description

The world is growing increasingly reliant on collecting and analyzing information to help people make decisions. Because of this, the ability to communicate effectively about data is an important component of future job prospects across nearly all disciplines. In this course, students will learn the foundations of information visualization and sharpen their skills in communicating using data. Throughout the semester, we will explore concepts in decision-making, human perception, color theory, and storytelling as they apply to data-driven communication. Whether you're an aspiring data scientist or you just want to learn new ways of presenting information, this course will help you build a strong foundation in how to talk to people about data.

Prerequisite: None.

Assignments

1. Assignments [40%]: Assignments will take the form of short visualization exercises and responses to course readings. Most assignments will be posted on [Slack](#).
2. Labs [30%]: Labs will primarily take place in the open-source data visualization software [Plotly](#). Students are encouraged to work in pairs during these labs.
3. Final Project [20%]: The final project will see you applying what you have learned to a dataset of your choice. There will be several (graded) milestones along the way to help you prepare, and we will hold a demonstration session on the final day of class.
4. Class participation [10%]: Classes meet Monday and Wednesday in Stoddard G2. Your participation is an important part of the learning process. Active participation in class and regular attendance will comprise the remainder of your grade.



Slack

- A “team messaging app”
- We’ll be using it for
 - many of the assignments in this class
 - asking and answering questions (rather than email)
- Works on
 - Most phones (iPhone, Android, Windows Phone)
 - The browser
 - Desktop app (Mac, Windows, Linux)

<https://sds136.slack.com/signup>

Workspace sidebar for user **sds136** (prof.amelia). It includes sections for Channels (All Threads, # general, # intros, # random), Direct Messages (slackbot, prof.amelia), and Apps. Navigation buttons for OR, TS, and N are visible at the bottom.

#intros
☆ | 👤 1 | 🗨️ 0 | [Add a topic](#)



Channel header actions: Phone, Info, Settings, Search (Search), @, Star, and More options.

#intros

You created this channel today. This is the very beginning of the [#intros](#) channel. Purpose: *A place to introduce yourself!* ([edit](#))

[+ Add an app](#) [👤 Invite others to this channel](#)

Today

-  **prof.amelia** 12:42 PM
joined #intros.
-  **prof.amelia** 12:42 PM
set the channel purpose: A place to introduce yourself!

+ Message #intros 

This course focuses
on “communicating
with data” but it will be
mostly about
visualization

What is visualization?



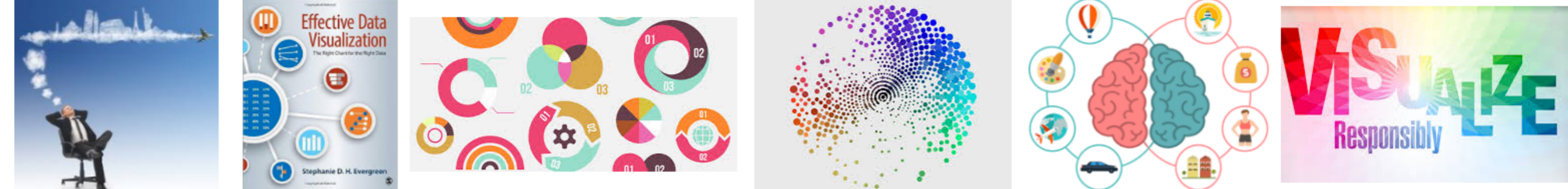
visualization



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process math success relationship progress connection comparison time art power security color taste money network graph time series correlation



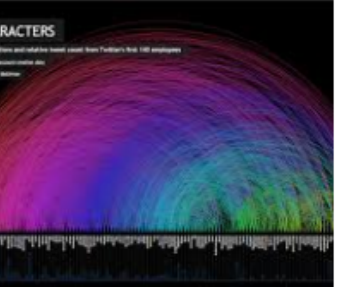
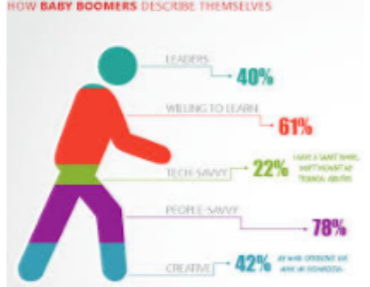
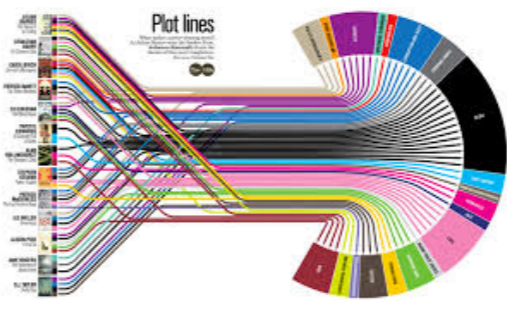
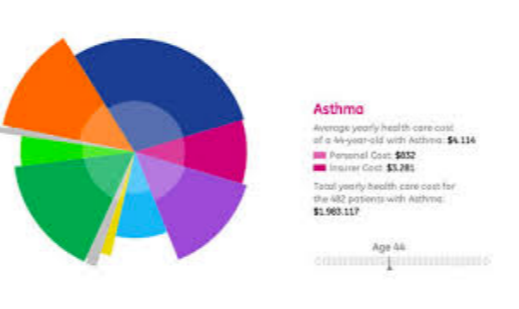
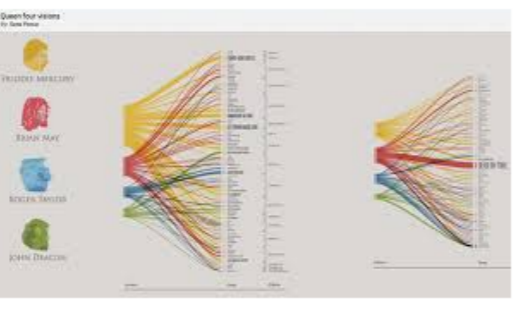
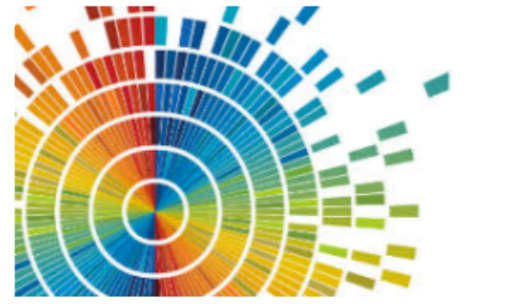
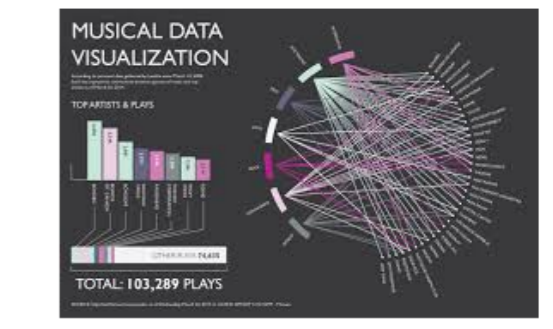
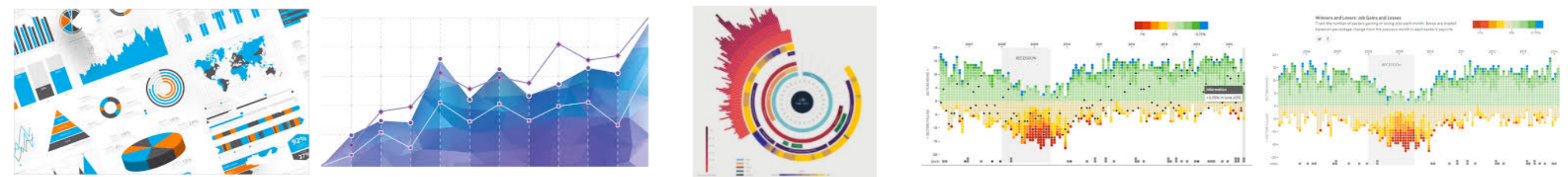
What is data visualization?

Google data visualization

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business intelligence complex funny bad multivariate simple real time heat map treemap interesting graphic design science art animated sound song fancy



We will also consider
information visualization
infographics
statistical graphics
and more

What is data?

Data is a set of variables
that capture various
aspects of the world

It also contains
observations over those
variables

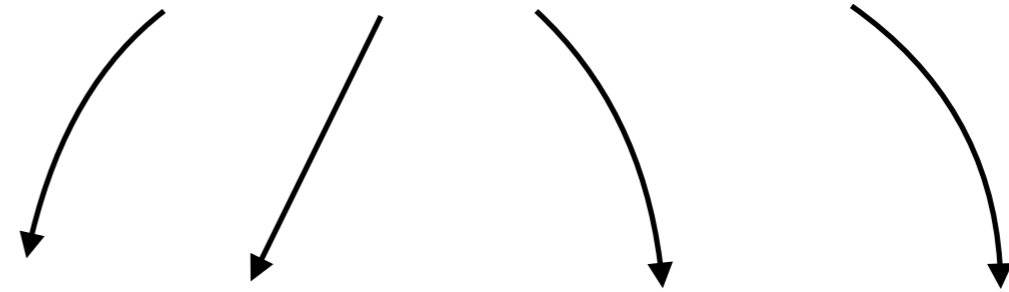
Hadley Wickham

(author of ggplot2, an R package for data viz)

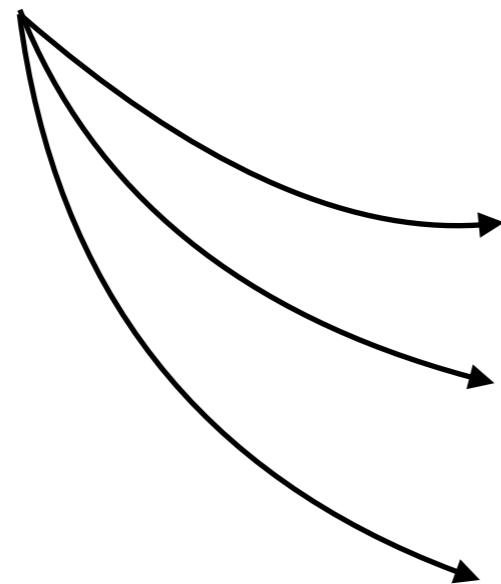
has an idea of

Tidy Data

Columns are variables



Rows are observations



Data can seem neutral,
but it is always generated
by humans

#privilegealert

I am a

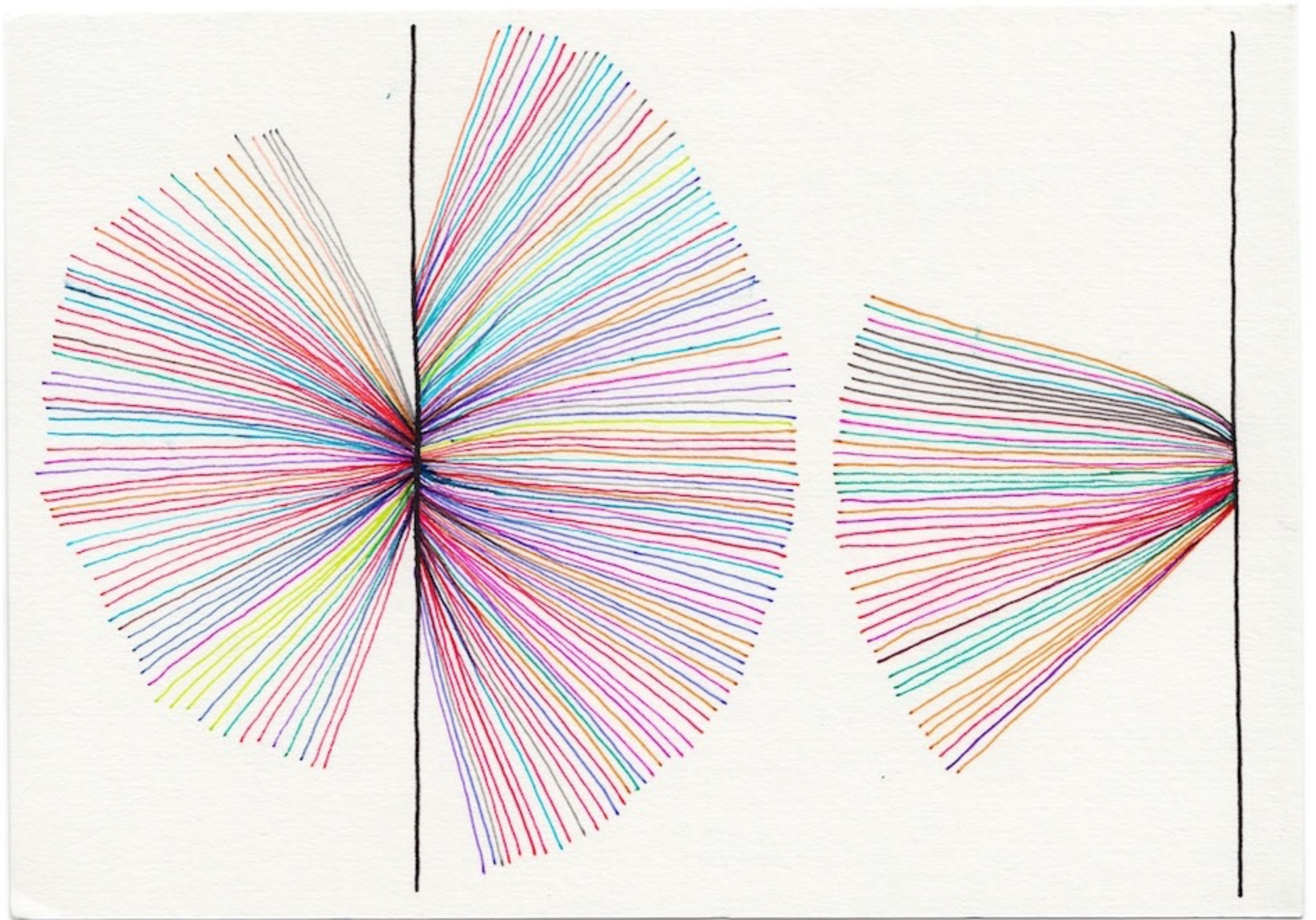
- white
- straight
- cisgender
- middle class
- highly educated
- American

lady

I'm doing the best I can when I talk about issues of race, class, gender, and other sensitive topics. But you should *always feel free* to call me out (publicly or privately).

Brainstorm time: Make a list of all the places you left “data exhaust” today

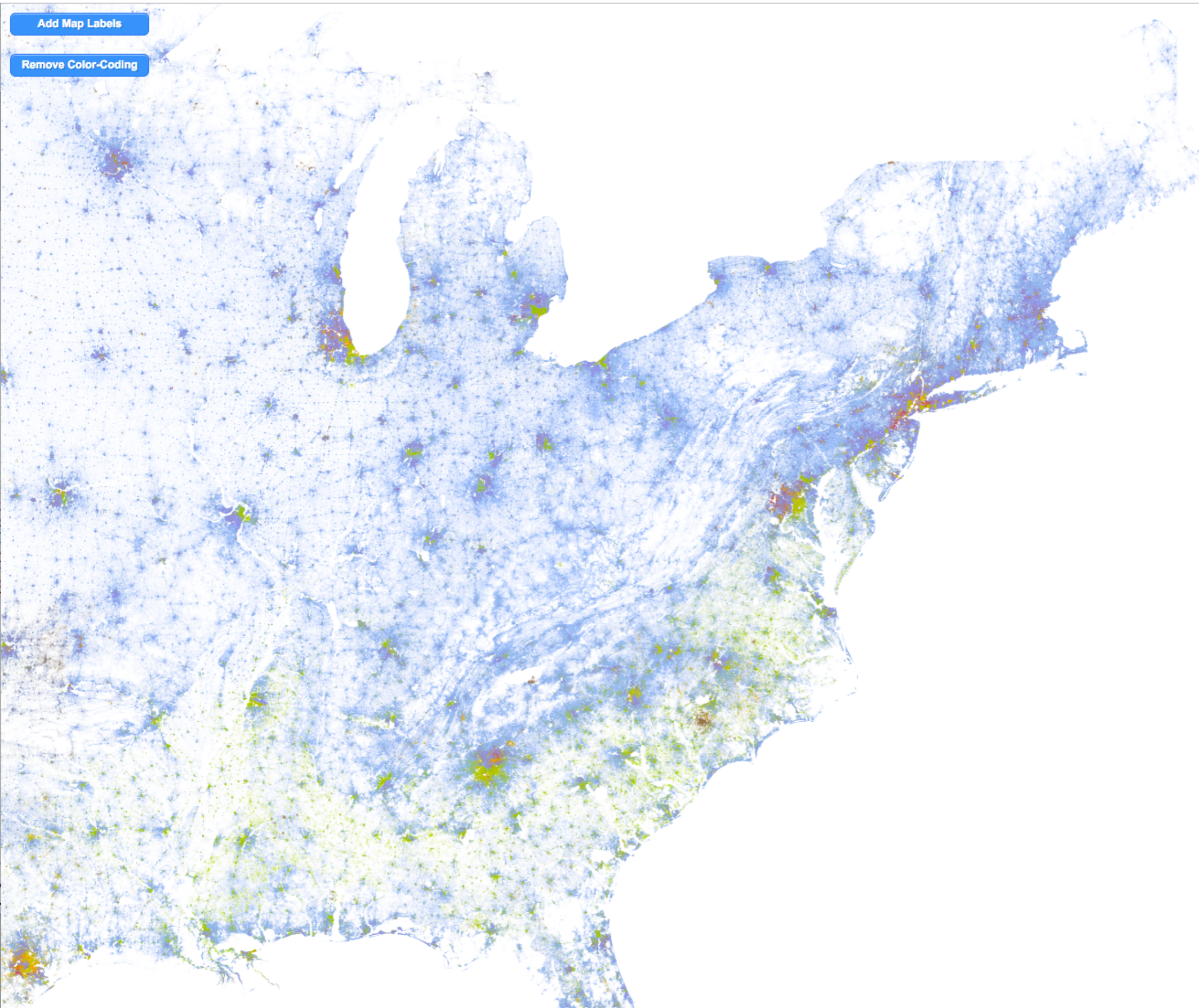
A taste of data visualization



Add Map Labels

Remove Color-Coding

Hide Overlays



2010 Census Block Data

1 Dot = 1 Person

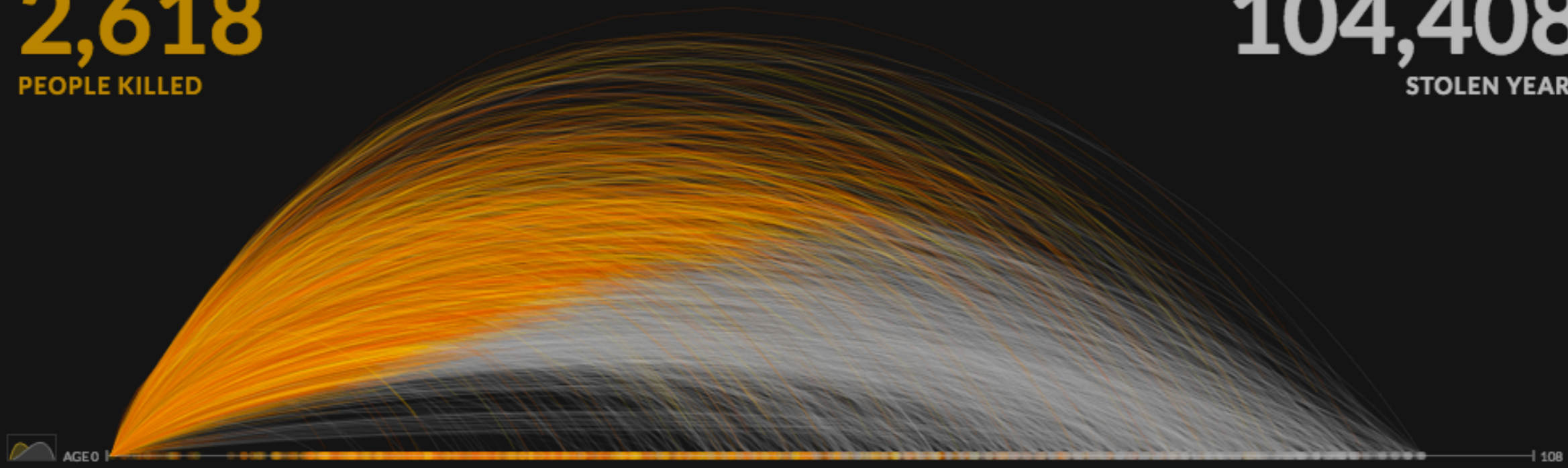
- White
- Black
- Asian
- Hispanic
- Other Race / Native American / Multi-racial

[What am I looking at...?](#)

<https://demographics.virginia.edu/DotMap/>

2,618
PEOPLE KILLED

104,408
STOLEN YEARS



AGE 0

108

SEX | AGE GROUP | REGION | TIME

A public service provided by PERISCOPIC | Sources and Methods |  

<http://guns.periscopic.com/?year=2013>

Your first assignment!

- Sign up for Slack <https://sds136.slack.com/signup>
- Create a bio (including photo, please!)
- Introduce yourself in the #intros channel with
 - Your first name and preferred pronouns
 - Your class year/major
 - One thing you like to read (a newspaper, magazine, genre of books, subreddit, blog, etc)