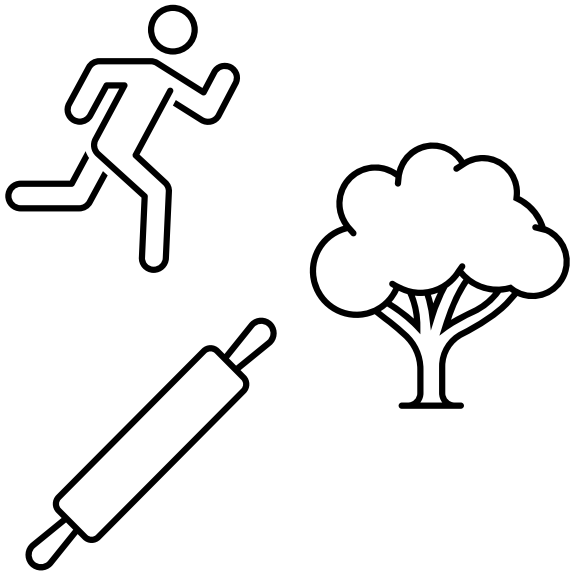
VISUAL ANALYTICS: WHAT IS THIS CLASS?

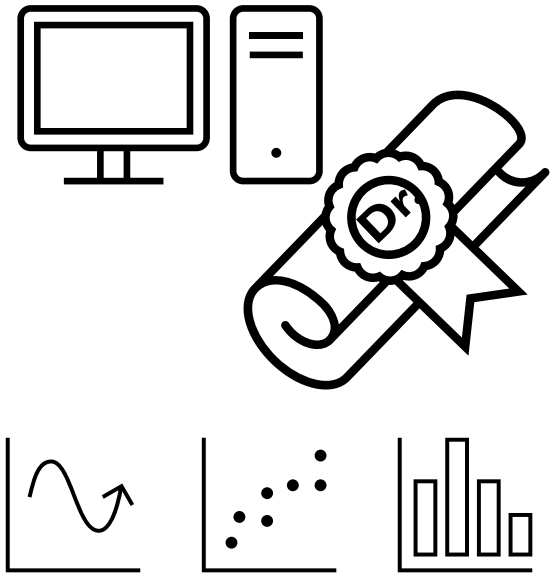
AB MOSCA (THEY/THEM)

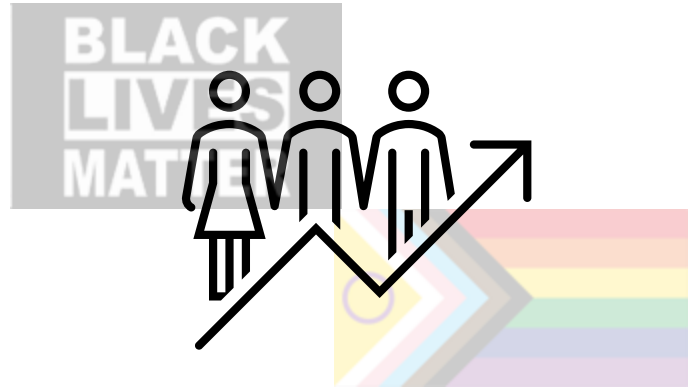
TODAY'S PLAN

- Name tags
- Introductions
- What is visual analytics?
- Course structure

WHO AM I?







WHO ARE YOU?

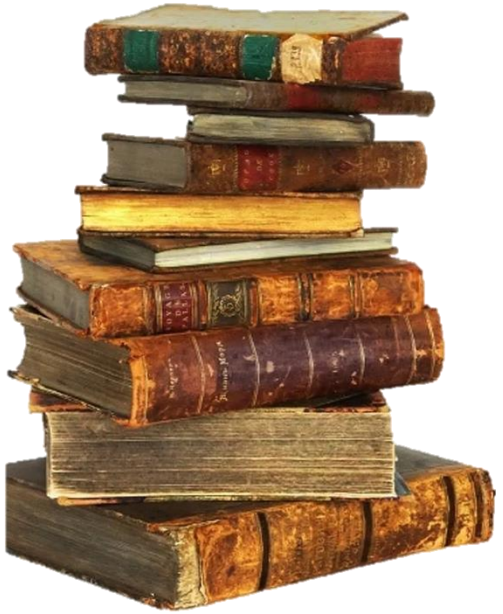
- Form groups of ~3
- Introduce yourselves
- Share:
  - One thing you are excited about learning in this class
  - One thing that makes you nervous for this class
- Find:
  - One thing that the entire group has in common (favorite color? left handed? everyone hates kale?)

WHO ARE YOU?

- Form **new** groups of ~3
- Introduce yourselves
- Share:
  - One thing you are excited about learning in this class
  - One thing that makes you nervous for this class
- Debate:
  - Would you rather (a) be able to touch a book and instantly read it but retain your current reading memory, OR (b) retain your current reading speed but remember everything you've read perfectly forever?

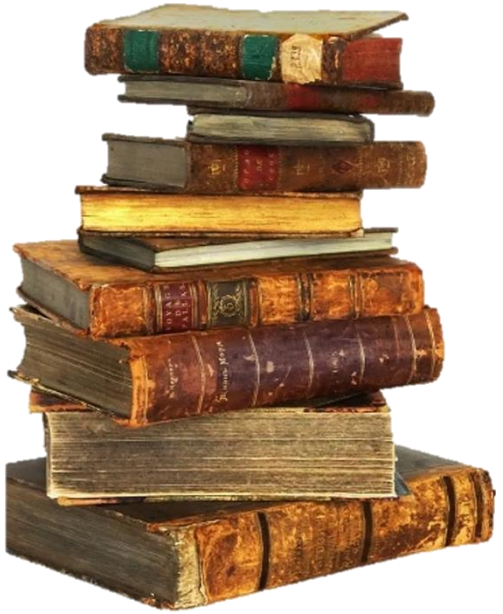
WHAT IS VISUAL ANALYTICS?

- What are some non-traditional forms of data?



WHAT IS VISUAL ANALYTICS?

- How can we analyze this data? What make analysis hard?



WHAT IS VISUAL ANALYTICS?

- How can we analyze this data? What make analysis hard?
  - We're collecting and generating data faster than traditional methods can keep up– **our data is unmanageably big**
  - Not only is the data unmanageably big, but it is also usually **noisy and ambiguous** too
  - As **analysis techniques** advance, they **become harder to understand and communicate**

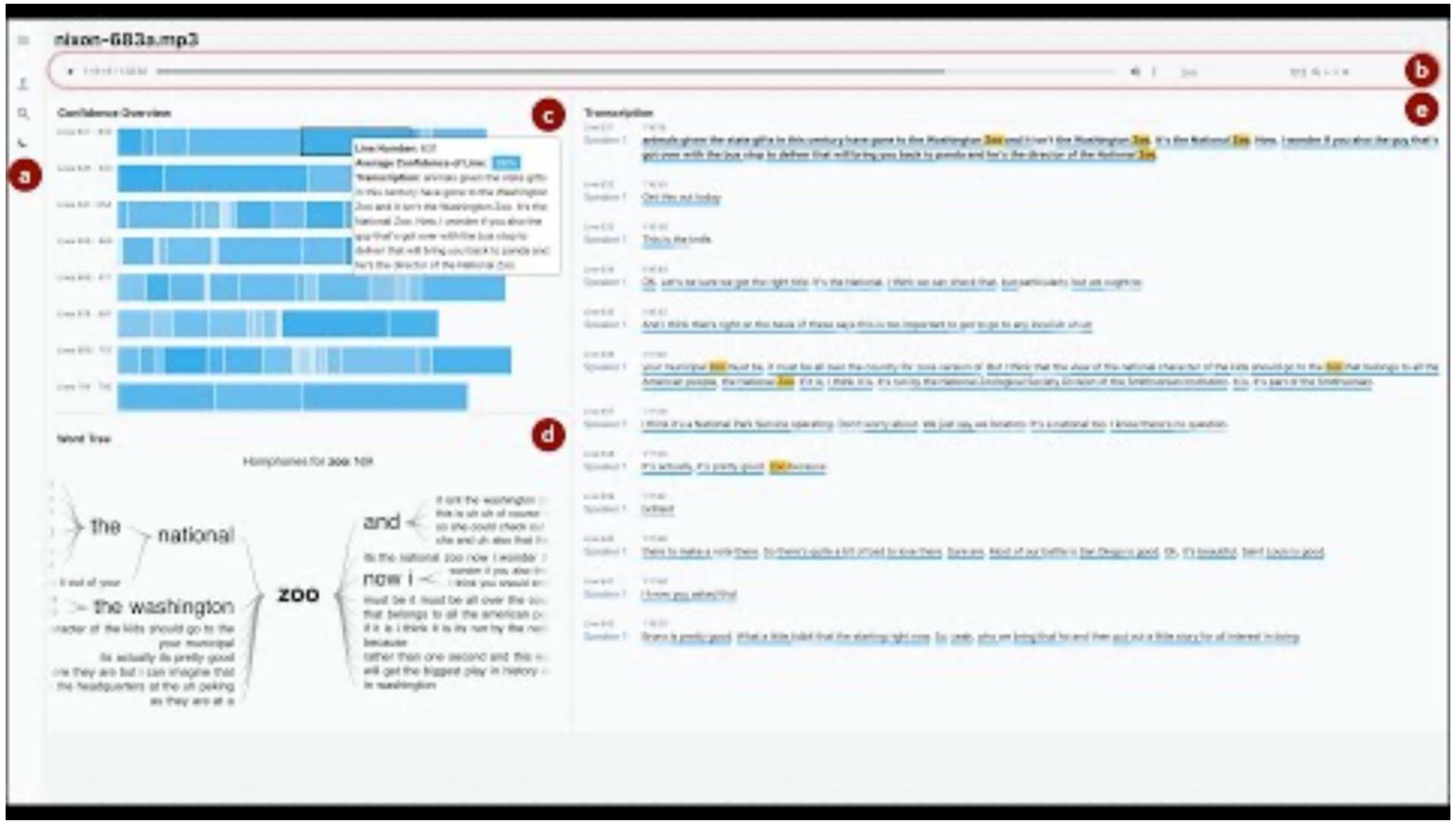
WHAT IS VISUAL ANALYTICS?

"The science of **analytical reasoning** facilitated by **interactive visual interfaces**"[1]

[1]Thomas, James J., and Kristin A. Cook, eds. *Illuminating the path: The research and development agenda for visual analytics*. IEEE Computer Society Press, 2005.

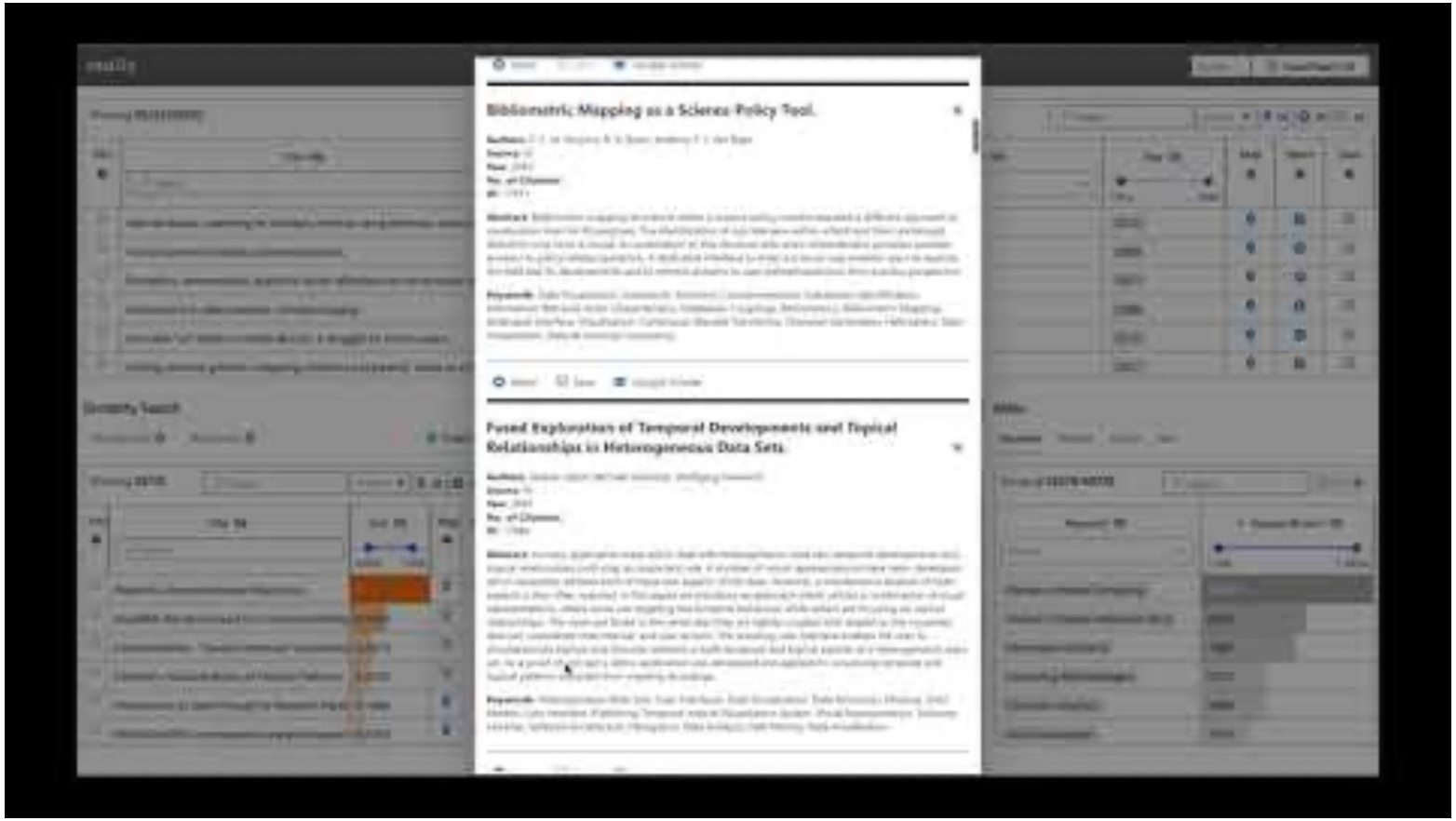
WHAT IS VISUAL ANALYTICS?

- Ex. ConFides
  - For analyzing audio data
  - https://www.youtube.com/watch?v=hbeDn5D-GCg



WHAT IS VISUAL ANALYTICS?

- Ex. VitaLITy
  - For analyzing academic papers
  - https://www.youtube.com/watch?v=x93tMYQvZn8

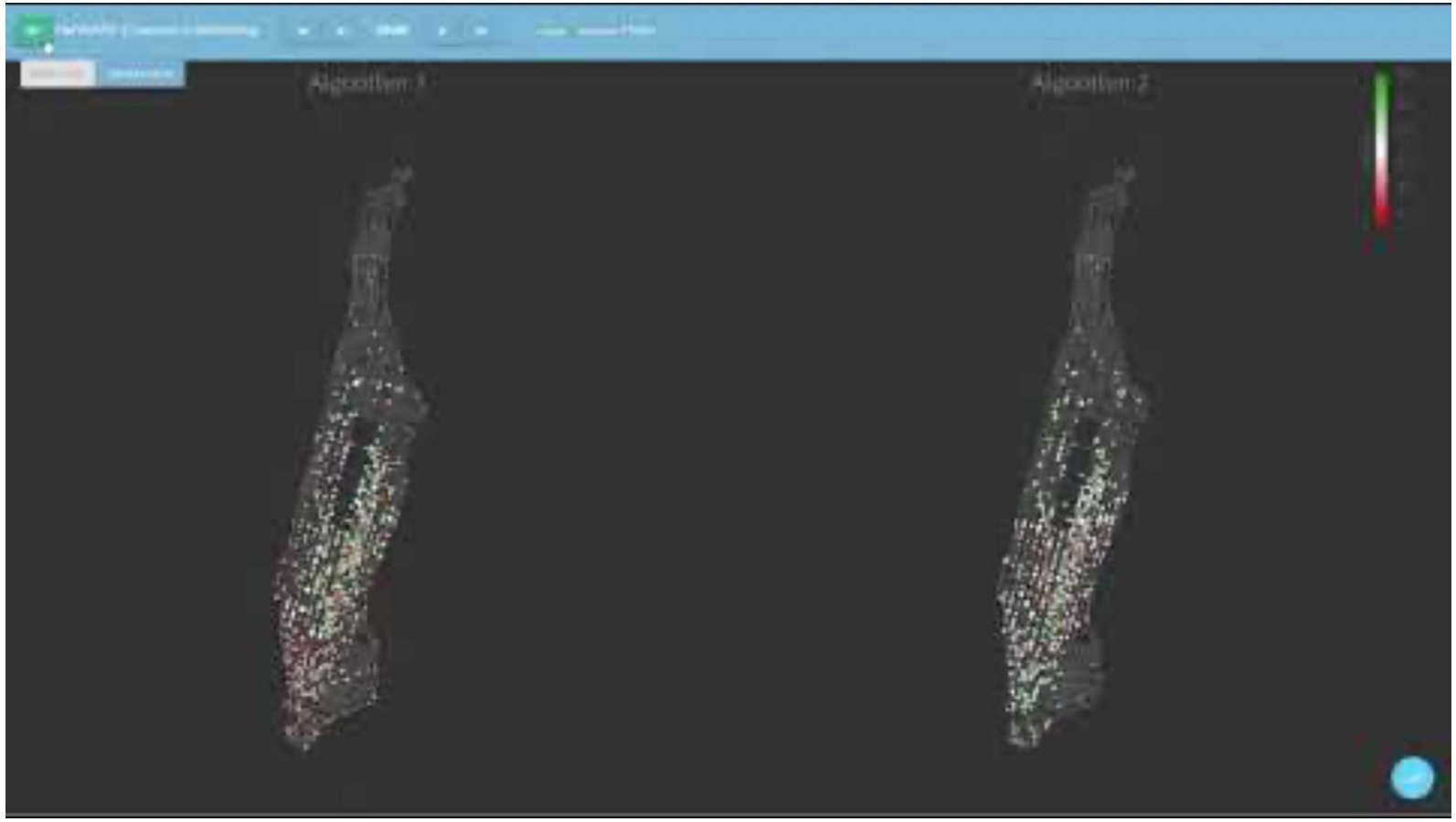


WHAT IS VISUAL ANALYTICS?

- Ex. Conch
  - For analyzing debates
  - https://www.youtube.com/watch?v=kTC33Ta6W2A

WHAT IS VISUAL ANALYTICS?

- Ex. FairVizARD
  - For comparing algorithms
  - https://www.youtube.com/watch?v=0-G-o4E0gKM



WHAT IS VISUAL ANALYTICS?

discovery and **communication** of meaningful patterns in data

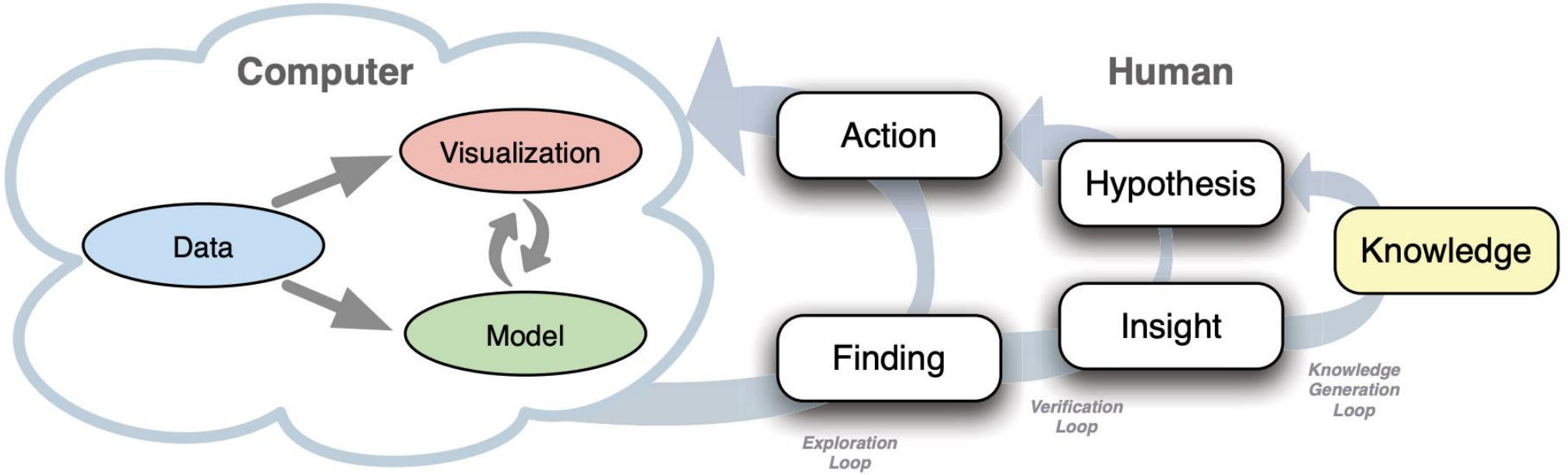
"The science of **analytical reasoning** facilitated by **interactive visual interfaces**"[1]

[1]Thomas, James J., and Kristin A. Cook, eds. *Illuminati… …ch: The research and development agenda for visual analytics*… Computer Society Press, 2005.

visual **representations** of data that reinforce human **cognition**

WHAT IS VISUAL ANALYTICS?

Big Idea: Leverage complimentary strengths of humans and computers



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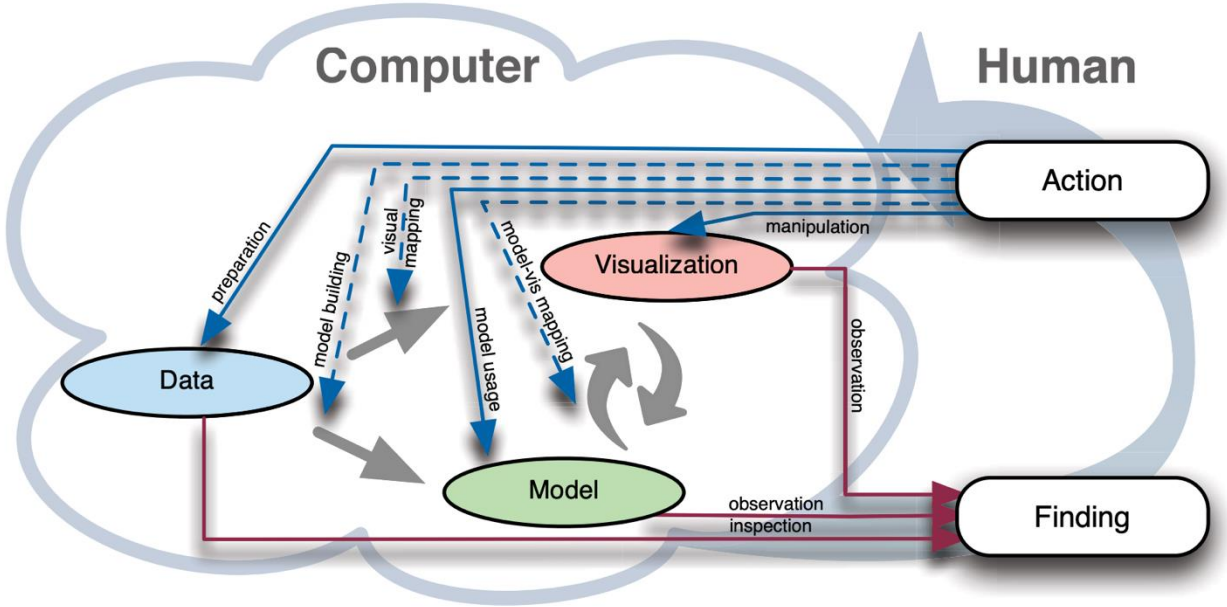

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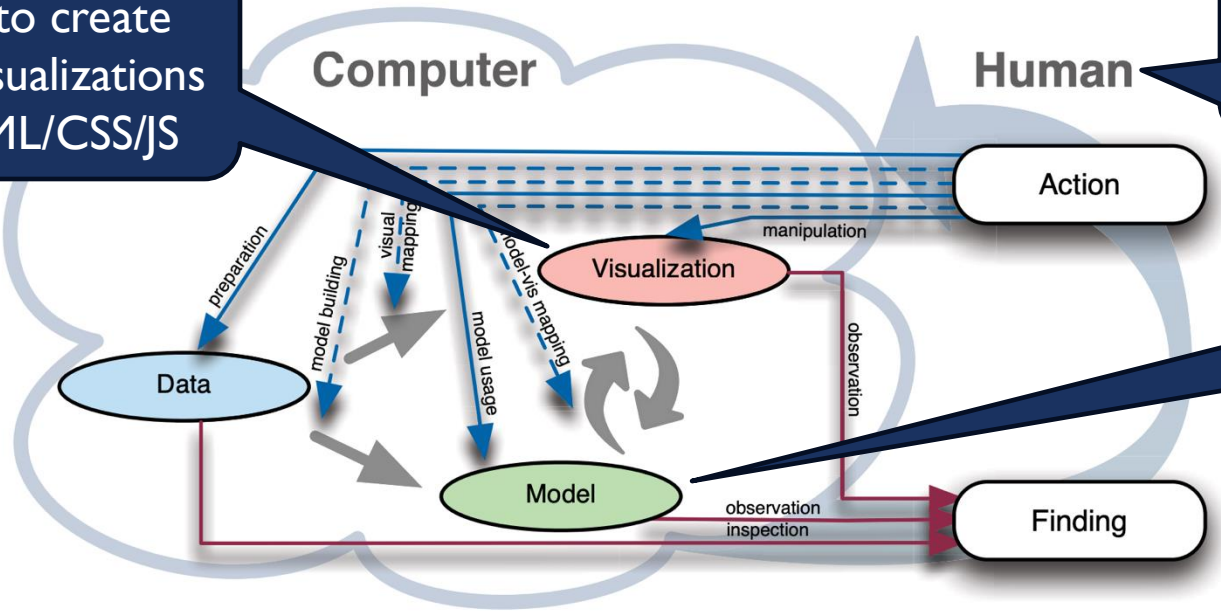
WHAT WILL YOU LEARN IN THIS CLASS?

Big Idea: Leverage complimentary strengths of humans and computers

(1) How to create bespoke visualizations using HTML/CSS/JS

(2) Ways to include humans in the analysis loop

(3) Integration of visualization and modeling



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WHAT **WON'T** YOU LEARN IN THIS CLASS?

- ✕ Intro to coding (you should be an intermediate level coder)
- ✕ Intro to statistics (you should have basic statistical knowledge)
- ✕ Intro to data science (you should be comfortable wrangling data)
- ✕ Deeper understanding of information visualization (take CSC/SDS for this)

TODAY'S PLAN

- Name tags
- Introductions
- What is visual analytics?
- Course structure

COURSE WEBSITE

https://amosca01.github.io/SDS-CSC235/

- Overview (course syllabus and policies)
- Schedule of topics and assignments
- Slides (posted before class)
- Assignment instructions
- Additional materials (ex. data, handouts)
- Useful links

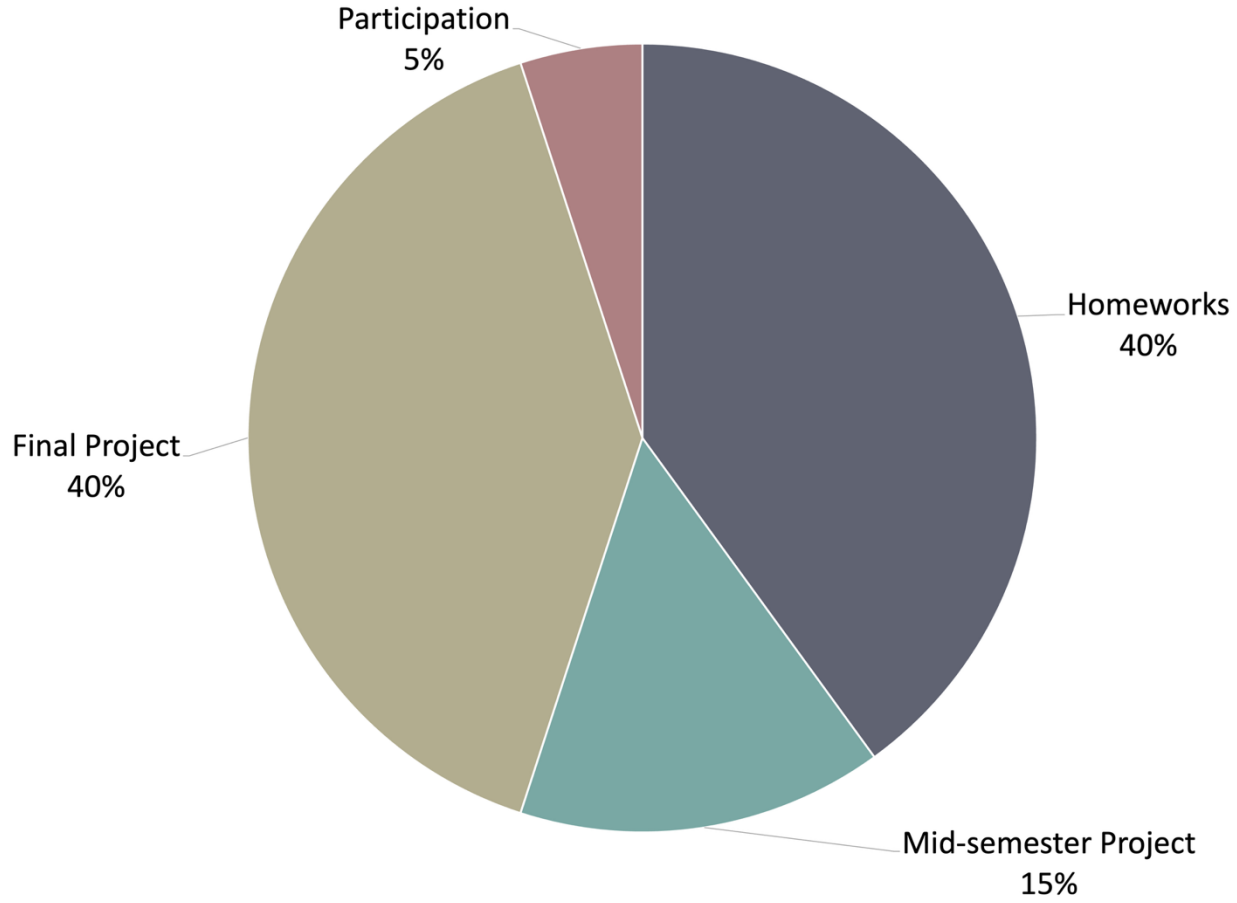
TIME MANAGEMENT

Federal guidelines suggest 3 hours of work per credit per week. This is a 4 credit course, so you should expect to spend 12 hours on it per week:

- 2.5 hours in class
- 1-2 hours preparing for class
- **7.5-8.5 hours on homework and outside study**

The purpose of class time is to introduce and explore new topics. To complete assignments, you will often need to look up, learn, and practice material that extends beyond that covered during class meeting times.

ASSESSMENT



Want to know your current grade?

1. Calculate your average for each category (participation, homework, mid-semester project, final project)
2. Calculate the weighted average of all four categories:

$$grade =$$
$$0.05 * avg_{participation}$$
$$+0.4 * avg_{hw}$$
$$+0.15 * avg_{midSemesterProj}$$
$$+0.4 * avg_{finalProject}$$

LATE POLICY

We develop skills through practice and assignments build on one another **AND** life happens.

- You have unlimited extensions in this class
- Extensions must be requested before assignment due date
- For an extension, submit a file with:
  - Your name (and group members' names)
  - Assignment number and original due date
  - Duration of extension and new due date
  - Review of any prior extension requests
  - Ex.

```
Ab Mosca and Jordan Crouser
HW09 originally due 10/01/24
2 day extension, now due 10/03/2024
Previous extentions: HW02 (1 day), HW7 (2 days)
```

- Late work receives lowest priority for grading

REVISE AND RESUBMIT

We develop skills through repeated practice and learn from mistakes.

- You have unlimited revise and resubmits in this class
- You cannot revise and resubmit an assignment on which you earned a 0
- **Your resubmission must include a changelog**
  - resubmits that do not include a changelog will not be graded
- Highest grade will prevail
- Resubmitted work receives lowest priority for grading

COMFY CLASSROOM

- Need to stand up and leave for a minutes? Do it.
- Want to sit somewhere other than a chair? Go for it.
- Have a concentration aid? Use it.
- Hungry? Thirsty? Eat and drink (be careful of spills!).
- Have kids and no childcare? Bring your kids.

- Do what you need to do to learn, just be respectful of other learners.

COMMUNICATION

- All communication will occur via Slack (if you email me I will likely not respond)
- Ask questions in the #questions channel
- Check for announcements etc. in the #general channel
- DM for specific-to-you questions

ACADEMIC INTEGRITY

- Generative AI can be a useful learning tool, however **using gen AI to do the intellectual work of your assignments**:

1. Violates the academic integrity policy of this course (see course overview for details)
2. Will negatively impact your learning
3. Is not going to result in an A (trust me, at this point gen AI is not good at visual analytics)

WHAT I EXPECT FROM YOU

- You like to be challenged and are excited about "figuring stuff out"
- You understand that temporary discomfort is part of learning
- You are willing to get comfortable asking questions and sharing your ideas
- You are dedicated to being part of a community of learners

WHAT YOU CAN EXPECT FROM ME

- I see class as a collaboration
- I am happy to add/change topics (as possible)
- I want to make adjustments (as possible) to accommodate everyone
- My number one goal is to see all of you succeed, and I believe that you each have what it takes to do so

QUESTIONS?