Today’s Class

- Briefing Instructions
- Lecture
- Student Presentations
Briefing Instructions – Team Project

• Briefing topic: Your team should choose a data-related bill currently in Congress. Describe its content, status, and potential implications for enforcement for your reader – your boss / elected official.

• Briefings are informational pieces. Everything you need to know should be summarized and explained within the briefing. Your briefing should summarize key aspects of the bill (see next page) and provide a recommendation.

• Briefing is due by 11:59 p.m. 11/22

• Format: Two pages, 11 pt. font or larger, cite references in text as needed

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Briefing is worth 14 points. How your team be graded:

Each team member will get the same briefing grade.

• **Content:** 7 points
  – Does the briefing address the questions?
  – Is it clear and self-contained?
  – Is the briefing interesting to read?
  – Did you provide a recommendation?

• **Writing:** 7 points
  – Is the writing compelling, concise and informative
  – Does the piece read well? Is it informative?
  – Is the spelling and grammar correct? Is the piece appropriately referenced?
Briefing Structure

- A briefing is **informational**, often prepared for a decision-maker, who may need to make hard choices about topics that they do not understand well or don’t have time to research in-depth.

- A briefing fills in key details your decision-maker needs to know. Your briefing will also **propose a recommendation** on whether to vote for the bill or not.

- **Your briefing should address the following questions**
  - What bill are you describing, who introduced it, and when?
  - What does the bill do? (significant aspects)
  - Who will the bill impact and how?
  - What are its limitations? (legal limitations, what it does not cover)
  - How will it be enforced?
  - What is your recommendation? (should your stakeholder vote for or against this bill and why)
  - References as needed (not counted in page count)
Reading for 11/9

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Lecture 16 – Data and Discrimination

• Automating Racism – how do things become not fair and what can we do about it?

• Data and the criminal justice system (TED talk)
Automating Racism

- **How does racism get incorporated in automated systems?**
  - **Coded inequities**: Metadata categories may serve as a proxy for race and tilt the outcomes against a racial group.
  - **Training bias**: Training set or training is not representative.
  - **Problem formulation**: Design of the algorithm may ask the wrong questions or categorize the data so we get biased answers.
  - **People/systemic bias**: Automated systems may perpetuate discriminatory contexts -- customs, racial stereotypes, and disadvantageous treatment -- inherent in their institutions, designers, and developers.
Coded Inequities – metadata that serves as a proxy for race

• Systems may disadvantage a group based on parameters other than race and end up effectively disadvantaging a racial group.

• Example:
  – Race info not collected in data set but zip code may be.
  – Zip code may be strongly correlated with race in many areas (particularly segregated ones).
  – By using zip code, the system would be indirectly making decisions based on race. In this case, zip code is a proxy for race.
  – May be disadvantageous with respect to health, credit, services, etc.
Problem formulation – are we asking the right question?

- **Obermeyer Study:** Examines commonly used commercial algorithm used by health insurers to steer sicker patients to high-risk management programs.
  
  - Goal of tool is to **reduce healthcare costs** by predicting future health costs and getting high-risk patients personalized care earlier.
  
  - Tool used by health insurers to assess the health profiles for millions of patients. Race not a parameter used in the data set.

- **Predicted health costs based on current health costs and other factors.**
  
  - Black patients with the same health costs as White patients tend to be much sicker (twice as many would be enrolled in high-risk management programs if their true health status measured accurately by the algorithm), i.e. score does not really capture health status

- Based on data set, health tool / algorithm makes decision **based on the wrong question:** “Who has the highest predicted health costs?”, which gives biased results disadvantageous to Blacks. “Who has more active chronic conditions?” would give much more unbiased results (resulting in more personalized care for sicker Blacks)
  
  - First question does not take into account differences in trust in health system, access and willingness to engage with system, different experiences with system
Training Bias – algorithms can be biased through non-representative training set and/or training

- **Microsoft’s Tay** (thinking about you) – artificial intelligence chatbot originally released by Microsoft via Twitter on 3/23/16.

- Tay was developed to mimic language patterns of a 19 year old American girl and learn by interacting with human users over Twitter.

- Tay “learned” to post inflammatory and offensive tweets through its twitter account.

- Software had not set up language filters and an environment for both what to say and what *not* to say ...

- Tay retweeted more than 96,000 times; service shut down 16 hours after its launch.
Systemic bias – technology embeds the biases of the developers, culture, and system in which it’s created

- Wikipedia has a page about its own systemic bias
- The average Wikipedia user is: white, male, English speaking, technically inclined, from a developed nation, from the Northern Hemisphere, etc.
- Wikipedia entries reflect this bias, and Wikipedia actively trying to address need for broader perspective, articles on non-white, non-US and European topics, articles about women, etc.
- **Why this matters:** Wikipedia used by many users and media sources for a “neutral perspective”. Bias matters.

temic_bias

Fran Berman, Data and Society, CSCI 4370/6370
When is technological bias exacerbated?

- **Over-trust in technology** (“the algorithm said so”)
- **Over-trust in data quality** (“the data must be right”)
- **Over-trust in technological scope** (disregard for the limits of the technologies)
- **No human in the loop** (what happens when there are unanticipated events or consequences)

Algorithms used to make decisions about people in

- Health care
- Criminal justice
- Education
- Insurance
- Credit
- Loans
- Elections
- Etc, etc.
Data and Criminal Justice

• “The danger of predictive algorithms in criminal justice”, Hany Farid, TED talk (18+ min)

• https://www.youtube.com/watch?v=p-82YeUPQh0
Resources for Lecture 18

• **Assessing risk, automating racism**, Science, Ruha Benjamin,
  [https://science.sciencemag.org/content/366/6464/421.full?ijkey=jV1o%2FNMCG.a7g&keytype=ref&siteid=sci](https://science.sciencemag.org/content/366/6464/421.full?ijkey=jV1o%2FNMCG.a7g&keytype=ref&siteid=sci)

• **Obermeyer Study**, Science Magazine,
  [https://www.sciencemagazinedigital.org/sciencemagazine/25_october_2019/MobilePagedArticle.action?articleId=1531916#articleId1531916](https://www.sciencemagazinedigital.org/sciencemagazine/25_october_2019/MobilePagedArticle.action?articleId=1531916#articleId1531916)
Presentations
• **Presentations for November 9**


  – “Hackers can shine lasers at your Alexa Device and do bad, bad things to it,” Popular Mechanics, [https://www.popularmechanics.com/technology/security/a29689494/hackers-lasers-alexa-google-home/](https://www.popularmechanics.com/technology/security/a29689494/hackers-lasers-alexa-google-home/) (Steven)

• **Presentations for November 12**


• **Presentations for November 16**

  – “Facebook’s threat to the NYU Ad Observatory is an attack on ethical research”, Neiman Lab, [https://www.niemanlab.org/2020/10/facebooks-threat-to-the-nyu-ad-observatory-is-an-attack-on-ethical-research/](https://www.niemanlab.org/2020/10/facebooks-threat-to-the-nyu-ad-observatory-is-an-attack-on-ethical-research/)

  – “Google offers to help others with the tricky ethics of AI”, Ars Technica, [https://www.wired.com/story/google-help-others-tricky-ethics-ai/](https://www.wired.com/story/google-help-others-tricky-ethics-ai/)
Need Volunteers -- Presentations for November 23


Presentations for Today
