Title: Rise Against the Machines: Understanding Algorithmic Bias
Workshop Length: 1.5 hours

Learning Outcomes or Objectives

- Students will be introduced to the machine bias inherent in algorithmic decision making, with a focus on information systems
- Students will discuss the effects of algorithm bias in order to articulate how some individuals or groups of individuals may be misrepresented or systematically marginalized in search engine results.
- Students will develop an attitude of informed skepticism in order to critically evaluate search results. (or strategies to cope with...?)

Assessment Methods:

- Activities/ level of participation
- Feedback survey

Outline

- Icebreaker Activity - **Elisa**
    - 5 min, Padlet
    - Ask where are algorithms at work? Or which technologies use algorithms:
        - recommender services Netflix,
        - retailers (Amazon, Target story)
        - search engines (Google,
        - evaluation systems (credit evaluation, insurance risk)
        - Social Media: YouTube, Instagram, TikTok
        - facial recognition software, SIRI, /ETC.
        - or Algos gone wrong? stories- share personal examples. Or could do true/false poll questions
- Introduction to Algorithmic Bias – **Susan/Shelby**
    - Algorithms:
        - Cultural Imagery of algorithms
        - Definition
        - Tasks and infrastructure
        - Types
    - Algorithmic Bias
        - Definition
        - Poll – What causes bias in algorithms?
            - Answer: All of them!
        - Causes of bias & examples (historical biases, proxies & feedback loops, unrepresentative training data, algorithmic objectives)
- Activity: Survival of the Best Fit Activity - **Susan/Shelby**
    - 15 min, individual
    - https://www.survivalofthebestfit.com/
    - Discussion Questions
- Google - **Lex**

- o Authority Skepticism
- o Dr. Safiya Noble's work & Google Images
- o Google Search Use Case
- o Reflecting on search results & autocomplete searches
- o Reporting Search Predictions
- Activity: Google Search Autocomplete - **Lex**
    - o 10 min
    - o Individual searching, small group discussion after initial search
    - o Have the groups compare the top 10 results of the same Google search they each do individually and reflect on these questions:
        - ▪ What differences did your group find between your individual Google search results? Consider whether they were on your laptop vs. mobile device? Why do you think there were differences?
        - ▪ What role, if any, might you play in the reason you received your specific results?
        - ▪ Based on the different search results, do you see any results that may be connected to the ethnicity, gender, sexual orientation or other demographical attributes of the person searching? If so, why would the results be contingent on demographical information?
        - ▪ Compare Google search vs. Duck Duck Go.
- Activity: Assigning algorithms on human/automated spectrum – **Susan/Shelby**
    - o 5 min
    - o Google Jamboard
    - o Discuss results
- Take-Aways – **Susan/Shelby**
    - o What strategies can you use to build algorithmic awareness?
        - ▪ Think twice (wait a half hour) before downloading free apps- realize you are paying with your data. Do you really need this?
        - ▪ Request more transparency from companies
        - ▪ Provide search feedback –
        - ▪ Get involved
        - ▪ From our Data Bodies: attempt to opt-out from data collection whenever possible. Deny the use of your location on apps, uncheck the boxes on sites to receive subscriptions offers from third parties, and opt out of pre-approved credit offers. Become familiar with digital security tools and practices, too. For example, the Web browser DuckDuck Go has built-in features to prevent other third parties from tracking a user's web browsing activities. Free messaging app Signal encrypts your messages "end to end," meaning that only your device and the device of your recipient can read your message. Ad blockers can also limit the tracking of your Web behavior. These individual-level actions can reduce some aspects of state and corporate surveillance as well as heighten your own awareness of your online presence.
        - ▪ https://securityplanner.consumerreports.org/
    - o Organizations to get involved with
    - o Further reading
- Conclusion/Wrap-Up
    - o Feedback survey