- Topic:
    - Facial recognition has gotten faster, cheaper, and more accurate in recent years. What are the ethical implications of companies using this technology and their security systems to track consumer activity?
- Centralized question
    - To what extent can corporations ethically use facial recognition to monitor an influence consumer behavior, given concerns about consent, bias, and privacy

Research:

- Focus: existing ethical concerns (fairness, privacy, consent, biases, etc)

1. Security Industry Association (2022). What science really says about facial recognition accuracy and bias concerns https://www.securityindustry.org/2022/07/23/what-science-really-says-about-facial-recognition-accuracy-and-bias-concerns/
    a. Abstract: the SIA article addresses common criticisms regarding the accuracy and potential biases of facial recognition technology
    b. Advocates for modern facial recognition systems that have significantly improved in accuracy across various demographic groups
        i. Ties to MIT's "Gender Shades" study (on the other side)
2. Martinez-Martin N. What Are Important Ethical Implications of Using Facial Recognition Technology in Health Care? AMA J Ethics. 2019 Feb 1;21(2):E180-187. doi: 10.1001/amajethics.2019.180. PMID: 30794128; PMCID: PMC6634990.
    a. Abstract: Applications of facial recognition technology (FRT) in health care settings have been developed to identify and monitor patients as well as to diagnose genetic, medical, and behavioral conditions. The use of FRT in health care suggests the importance of informed consent, data input and analysis quality, effective communication about incidental findings, and potential influence on patient-clinician relationships. Privacy and data protection are thought to present challenges for the use of FRT for health applications.
3. Mazura, J.C., Juluru, K., Chen, J.J. et al. Facial Recognition Software Success Rates for the Identification of 3D Surface Reconstructed Facial Images: Implications for Patient Privacy and Security. J Digit Imaging 25, 347–351 (2012). https://doi.org/10.1007/s10278-011-9429-3
    a. Abstract: Image de-identification has focused on the removal of textual protected health information (PHI). Surface reconstructions of the face have the potential to reveal a subject's identity even when textual PHI is absent. This study assessed the ability of a computer application to match research subjects' 3D facial reconstructions with conventional photographs of their face. In a prospective study, 29 subjects underwent CT scans of the head and had frontal digital photographs of their face taken. Facial reconstructions of each CT dataset were generated on a 3D workstation. In phase 1, photographs of the 29 subjects undergoing CT scans were added to a digital directory and tested for recognition using facial recognition software. In phases 2–4, additional photographs were added in groups of 50 to increase the pool of possible matches and the test for recognition was repeated. As an internal control, photographs of all subjects were tested for recognition against an identical photograph. Of 3D reconstructions, 27.5% were

matched correctly to corresponding photographs (95% upper CL, 40.1%). All study subject photographs were matched correctly to identical photographs (95% lower CL, 88.6%). Of 3D reconstructions, 96.6% were recognized simply as a face by the software (95% lower CL, 83.5%). Facial recognition software has the potential to recognize features on 3D CT surface reconstructions and match these with photographs, with implications for PHI.