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STAT 303

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Final Project Part One: Project Proposal

1. A brief description of your topic/algorithm/prediction problem.

For the final project we have decided to choose option 1b. In particular, we have chosen to analyze the benefits and ethical concerns of facial recognition technologies in a more broad sense. Facial recognition technologies (FRT’s) are the set of digital tools that perform tasks on human faces through the use of images and/or videos. These tasks include, but are not limited to: face detection, face attribute classification/estimation, face verification, and face identification. Despite the many uses of FRT’s there are many ethical concerns that arise from their usage. One of the primary concerns surrounding facial recognition is the privacy concerns caused by the use of photos of unknowing and unconsenting people in the testing data sets, as well as more general privacy concerns caused by the many uses of FRT’s. Another ethical concern is the use of algorithmically biased FRT’s that could have an impact on big decisions in peoples’ lives, such as the Face++, IBM, and Microsoft facial recognition algorithms that inaccurately assessed the gender classifier of darker skinned females at a higher rate than any other gender or demographic (*Gender Shades*). However, as New York police commissioner James O’Neil mentions in his article “How Facial Recognition Makes You Safer,” when used properly, facial recognition technologies can have positive impacts in sectors such as the criminal justice system. Overall, this project seeks to find the key ethical concerns of FRT’s as well as offer remedies and solutions to these same problems. While at the same time, we seek to balance these ethical concerns with the benefits these technologies create to hopefully come to a consensus on if FRT’s should be used to aid or make impactful decisions on human lives.

1. A list of your group members.

* Jaiden Atterbury
* Nicholas Yu
* Xavier Lee

1. An overview of the main research questions you hope to explore through your project.

* What are the primary ethical concerns and harms caused by facial recognition technologies?
* Are there any remedies/ways to mitigate these ethical concerns or harms?
* What are some of the benefits/allowances of facial recognition in sectors such as policing, banking, air travel, etc.?
* Do these aforementioned ethical concerns and harms outweigh the benefits that facial recognition technologies provide?
* Is facial recognition too biased to be used in situations that impact peoples’ lives?
* Who should ultimately hold authority over FRT’s? The government, private institutions, or the people?
* How can we improve facial recognition algorithms/make them work better than they currently do?
* Which areas of facial recognition create the most ethical concerns/harms?
* Why do corporations and institutions push for facial recognition technology despite its known ethical issues?
* What are some key features from already established facial recognition algorithms and technologies that should be kept when creating a more accurate and efficient design?

1. A list of five to ten references you plan to consult for your research.

## Buolamwini et al. - 2020 - Facial Recognition Technologies A Primer

## Hill\_Krolik\_2019\_How Photos of Your Kids Are Powering Surveillance Technology

## Buolamwini\_Gebru\_2018\_Gender Shades

## Hill\_2020\_Wrongfully Accused by an Algorithm

## O’Neill\_2019\_How Facial Recognition Makes You Safer

## Noorden - 2020 - The ethical questions that haunt facial-recognition research

## Castelvecchi - 2020 - Is facial recognition too biased to be let loose

## [NIST Study Evaluates Effects of Race, Age, Sex on Face Recognition Software](https://www.nist.gov/news-events/news/2019/12/nist-study-evaluates-effects-race-age-sex-face-recognition-software#:~:text=The%20NIST%20study%20evaluated%20189,face%20recognition's%20most%20common%20applications.)

## [Clearview AI Website](https://www.clearview.ai)

## [The Secretive Company That Might End Privacy as We Know It](https://www.nytimes.com/2020/01/18/technology/clearview-privacy-facial-recognition.html)

## [Clearview AI, Used by Police to Find Criminals, Is Now in Public Defenders’ Hands](https://www.nytimes.com/2022/09/18/technology/facial-recognition-clearview-ai.html)

## [Center for Strategic and International Studies](https://www.csis.org/analysis/questions-about-facial-recognition)

* [Amazon's Face Recognition Falsely Matched 28 Members of Congress with Mugshots](https://www.aclu.org/news/privacy-technology/amazons-face-recognition-falsely-matched-28)
* [Machine Learning in the AWS Cloud: Add Intelligence to Applications with Amazon Sagemaker and Amazon Rekognition](https://aws.amazon.com/rekognition/faqs/)
* [Gender Shades project](https://www.media.mit.edu/projects/gender-shades/overview/)

# [Three Key Problems with the Government's Use of a Flawed Facial Recognition Service](https://www.aclu.org/news/privacy-technology/three-key-problems-with-the-governments-use-of-a-flawed-facial-recognition-service#:~:text=Face%20recognition%20is%20generally%20problematic,used%20for%20a%20public%20purpose)

1. Any questions you have for me.

* For future parts of this project, do you want us to submit individually, or would you rather have one of our group members submit for the whole group?