RACIAL BIAS IN FACIAL RECOGNITION

Elizabeth Breslin | DS4002

In recent years the use of artificial intelligence for facial recognition by law enforcement has become a more frequent practice. However, recent studies have found that the facial recognition algorithms exhibit racial bias and non-white faces are incorrectly identified more often than white faces. Due to the majority of white faces being used to train the facial recognition models, the technologies work best on white faces. One study by the National Institute of Standards and Technology found that "facial recognition technologies falsely identified Black and Asian faces 10 to 100 times more often than they did white faces." More information on this study can be found here.

The small town of Madison, Wisconsin is considered one of the whitest towns in the United States with just under 80% of the population being white. The Madison Police Force decided to take a look at their own facial recognition technology since their pool is a majority white population, after various studies had come out discussing racial bias within these technologies.

The Chief of police has hired you as a data scientist to quantify how much less accurate their system is than a city with a more diverse population. You will be comparing the face data from Madison, WI to the face data from New York, NY, which is only 42% white. Since the technology is so expensive, the Police Department decided that it would only be worth the money to upgrade their database if the difference in accuracy to the more diverse New York database is 5% or greater.

To conduct this comparison you will be building and training a facial regression model in python to determine if the of the face in the photo is a male or female, once with the Madison data, and once with the New York data. Information on the data set can be found here. Then run a random 100 test set from the New York City data through both models and compare the test accuracies. Create a five slide presentation with your recommendations based on your findings for the Chief of Police. Include in the slides some commentary on the implications of your findings in terms of racial bias.
REPO; https://github.com/elizabeth-breslin/CS2