\*All files referenced are uploaded in *MicahBlackburnOpencvFiles.docx*

I did this project for two reasons:

1. I saw that most si classes were in python and wanted to learn more python before I started python classes. So I found a good class on youtube by the account “freeCodeCamp.org”.
2. Opencv was very interesting to me as I saw the connection to information technology, specifically when it came to a topic I had discussed in my si106 class, that police facial recognition systems were proven to be discriminatory.

My Steps

1. I went from basic image and video display to more complicated things like contour detection, blurring, histogram computation, and thresholding. These can be seen in my notes code called read.py.
2. All python files can be found in MicahBlackburnOpencvFiles
3. I then wrote code to train data in face\_train.py
4. I then went on to face detection with haar cascades in face\_detect.py.
5. I then made a detection face recognition system that read in loaded images from my computer, detect the face, and guess which face was with the OpenCV built-in recognizer in face\_recognition.py.
6. Build a facial recognition system on Kaggle (a data science-driven coding website. This project was able to loop through all the Simpson pictures provided in the data set, train the data, and use opencv to predict which characters a certain picture was. I am still working on getting it to work quicker and also have better accuracy. The videos below show the algorithm working.

This is the link to my project on Kaggle:

<https://www.kaggle.com/micahblackburn/simpsons-micah-blackburn-2022>

Youtube Links of the algorithm working:

Pt1: <https://youtu.be/nQ3VArAzX4w>

Pt2: <https://youtu.be/h9tGJzZXkJo>