Visual Inspection – Tyler Quackenbush

I chose to make a DNN-based face classifier. Face detection is done using OpenCV's built in dnn/facial_recognition module.

Faces are cropped to fit a small frame, then run through a Canny edge detection.

A database of faces was compiled from three different datasets, along with labels that were renamed "Smiley," (CelebA database) "Frowny," (mugshots) and "Extra Special." (Asian actresses). Good, bad, and ugly started to be a little demeaning in the context of the datasets I could find, so I had to ditch those labels. I then trained a DNN to take in a Canny edges picture and approximate it as one of the three categories. Since there were very few images in the "Extra Special" category, the DNN doesn't identify a face in that category very well.

Here are two videos of the detector in action:

https://youtu.be/_SB-JZgD-ZM

https://youtu.be/fwqOR9Ciilw

The largest challenge (as with any DNN task) was getting the quantity and quality of data necessary to train a good DNN. Since there are remarkably few databases that categorize people based of their goodness, badness, and ugliness, I had to use some strange databases with not enough data, just so each database would be distinct. Overall, it works decently, but it's not very predictable.