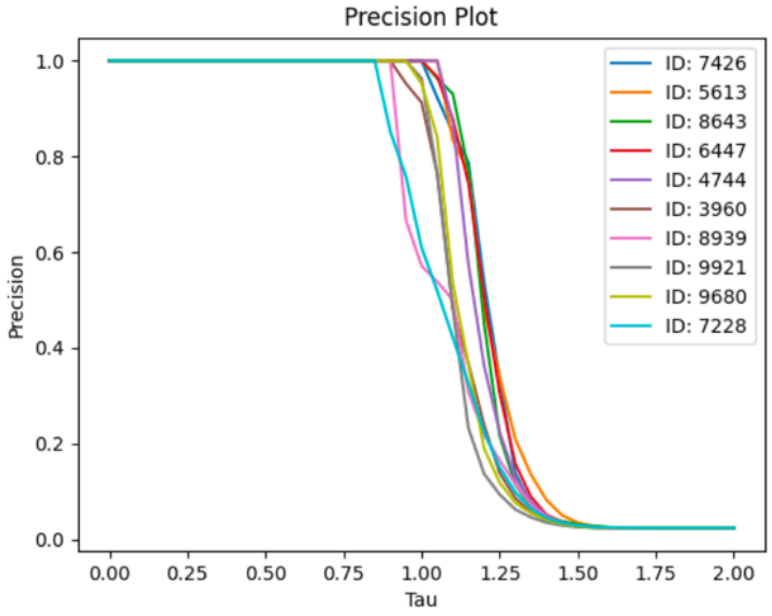
Alex Nassif
Dennis La
Sophanna Ek

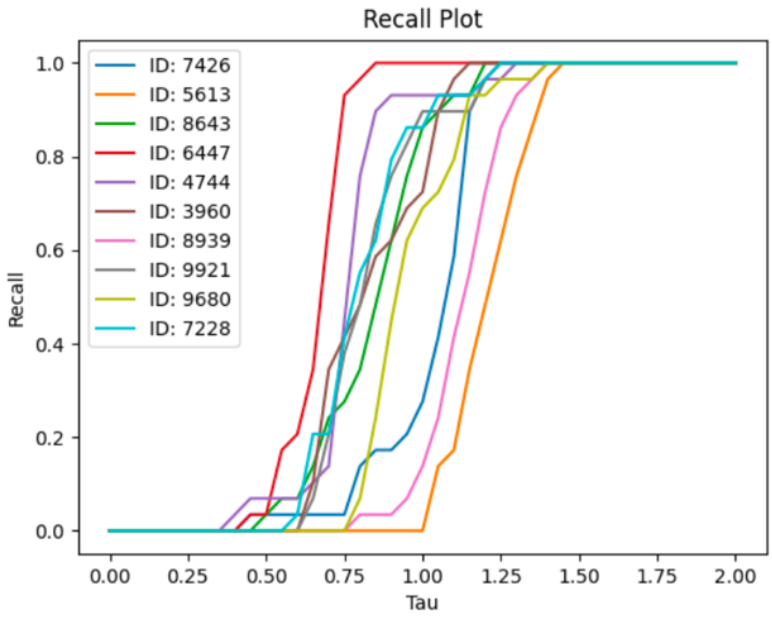
CECS 551 Assignment 10 Report

Experimental Results

Tau Range = 0 to 2

Tau Interval = 0.05





Discussion

At low tau values (around 0.75 and below), the system had high precision but low recall. A low tau meant that the system was stricter on deciding which images were the same as the anchor image. As a result, the system was less likely to produce false positives (which explains the high precision) but more likely to produce false negatives (which explains the low recall). With a low enough tau, the system just ended up claiming that every other image was not the same celebrity as the anchor image.

At the other end of the spectrum, a high tau (around 1.25 and above) caused the system to have low precision but high recall. A high tau meant that the system was more lenient on deciding which images were the same as the anchor image. Therefore, the system was less likely to produce false negatives (which explains the high recall), but more likely to produce false positives (which explains the low precision). Thus, the system would predict every other image as the same celebrity of the anchor image with a high enough tau.

The value of tau that yielded the best values for precision and recall was around 1. When tau was around 1, the system struck an optimal balance between being strict and lenient for determining which other images were of the same celebrity compared to the anchor image. With a tau of about 1, both the precision and recall were relatively high which improved overall accuracy.

References

Yolo v3 Model from: https://github.com/sthanhng/yoloface

FaceNet Model from: https://github.com/nyoki-mtl/keras-facenet