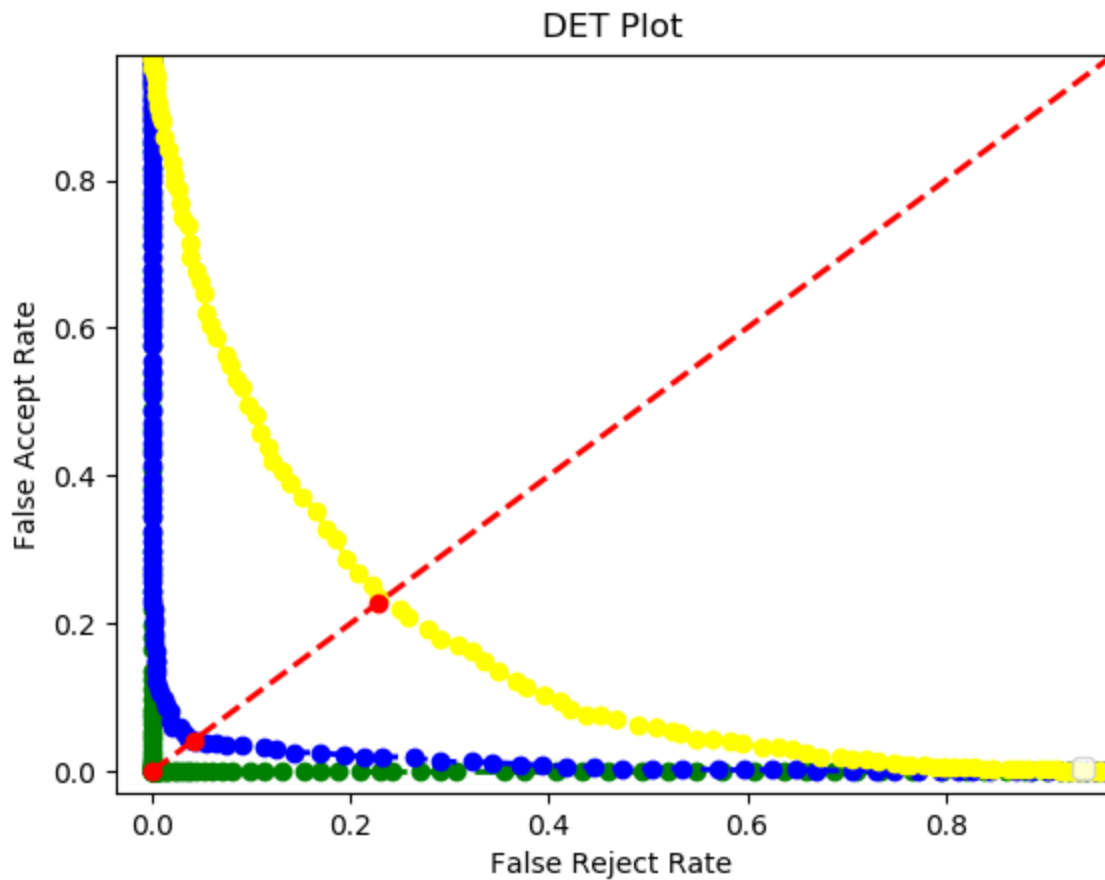


Green curve is the ROC curve for the Biometric System 1.

Blue curve is the ROC curve for the Biometric System 2.

Yellow curve is the ROC curve for the Biometric System 3.

Biometric System 1 is the best out of the three systems because its curve bears the closest resemblance to the perfect ROC curve. Regardless of the threshold level set, it has a near perfect True Accept Rate with little False Accept Rate. Biometric System 3 is the worst out of the three systems because its curve deviates the most from the perfect ROC curve. It has a comparably higher False Accept Rate for each True Accept Rate at every single threshold level.



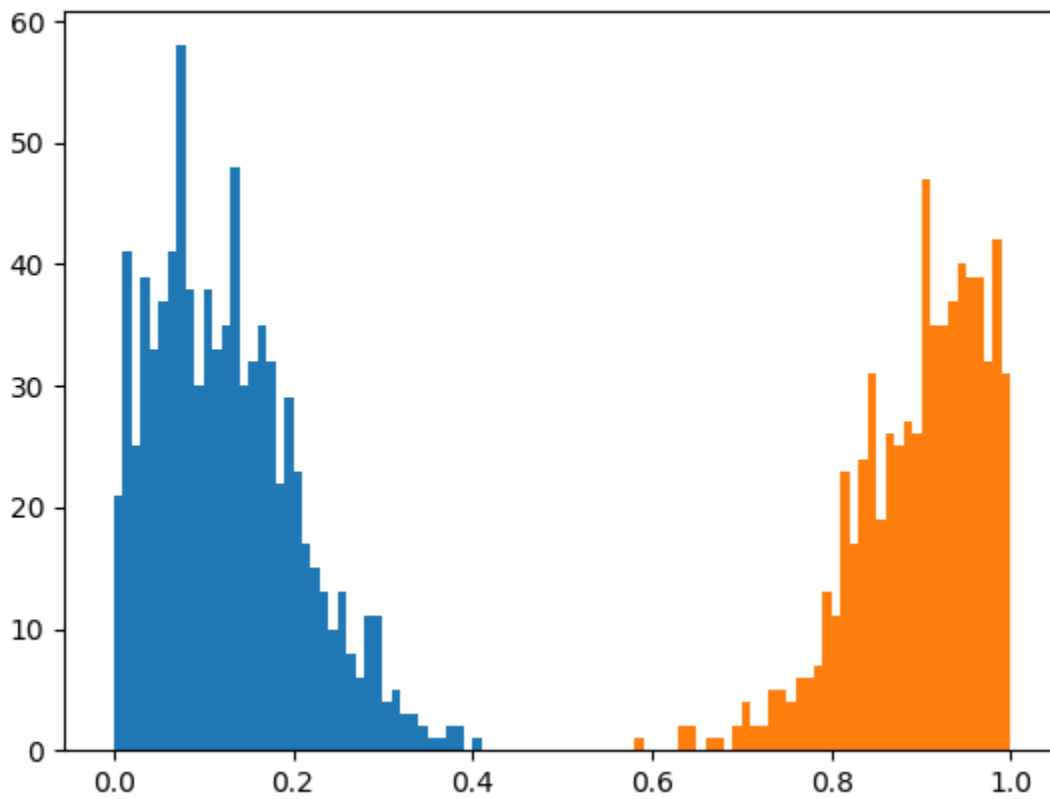
Green curve is the DET curve for the Biometric System 1.

Blue curve is the DET curve for the Biometric System 2.

Yellow curve is the DET curve for the Biometric System 3.

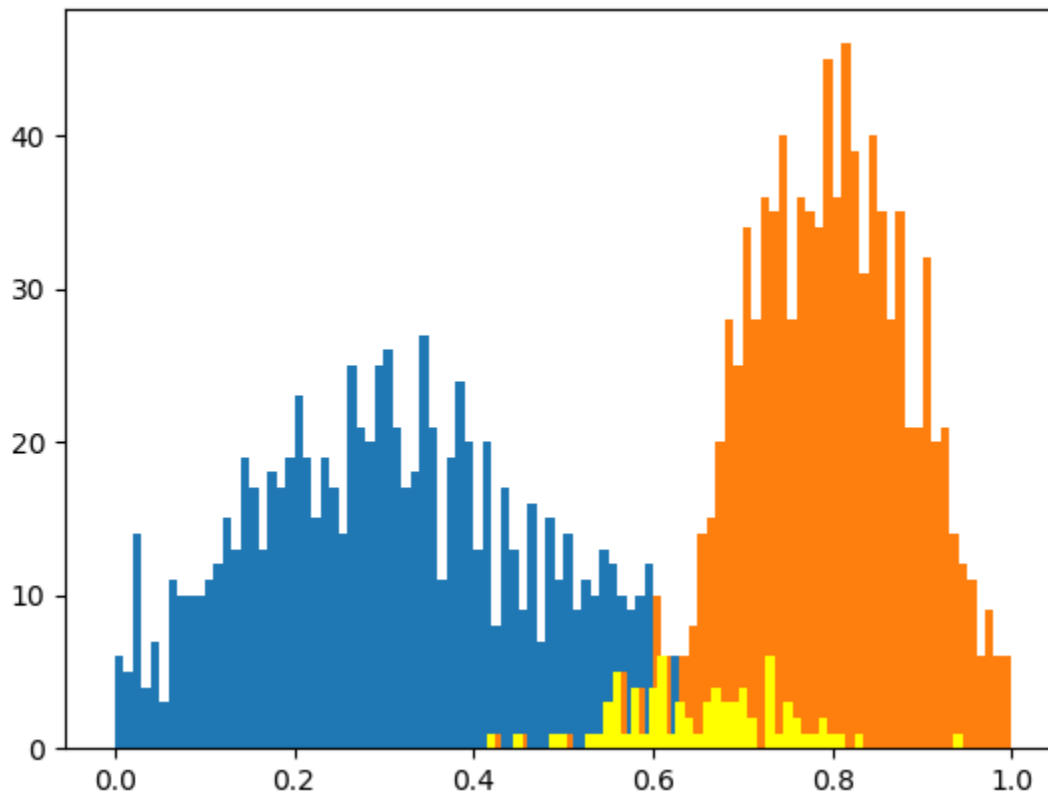
Biometric System 1 is the best out of the three systems because its curve bears the closest resemblance to the perfect DET curve. For most part of the threshold level range, it has a near zero False Acceptance and False Rejection Rate. System 1 is also the best because of its lowest EER rate, which means that its optimal spot has close to zero False Acceptance Rate and zero False Rejection Rate. Biometric System 3 is the worst because it has a higher False Acceptance Rate and False Rejection Rate (gentler arc) for every threshold level compared to Biometric System 1. Its relatively higher EER also means that its optimal spot has a higher False Acceptance Rate and False Rejection Rate.

Histogram Overlap for Biometric System 1 (Imposter and Genuine Scores)



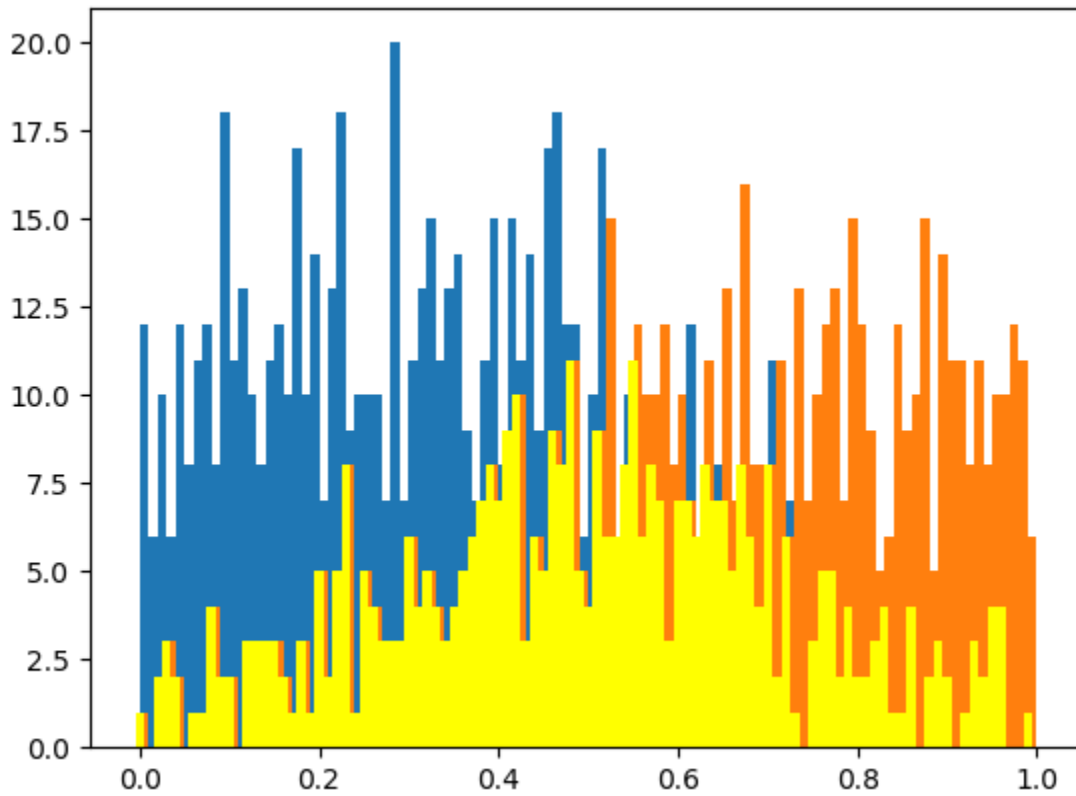
Biometric System 1 has zero overlap between the imposter and genuine scores. For a large range of threshold level, there will be zero False Acceptance Rate and 100% True Acceptance Rate. This makes the system the best because there will be few errors.

Histogram Overlap for Biometric System 2 (Imposter and Genuine Scores)



Biometric System 2 has 5-10% overlap between the imposter and genuine scores. For a noticeable range of threshold levels, there will be non-negligible False Acceptance Rate and False Rejection Rate. This makes the system not as ideal as Biometric System 1.

Histogram Overlap for Biometric System 3 (Imposter and Genuine Scores)



Biometric System 3 has 50% overlap between the imposter and genuine scores. For a wide range of threshold levels, there will be significant False Acceptance Rate and False Rejection Rate. This makes the system the worst amongst the three systems.

Conclusion

All three metrics give the same conclusion that the first biometric system is the best and the third biometric system is the worst.