# CMPE 58Z - Introduction to Biometrics
# Assignment 1
# Spring 2020

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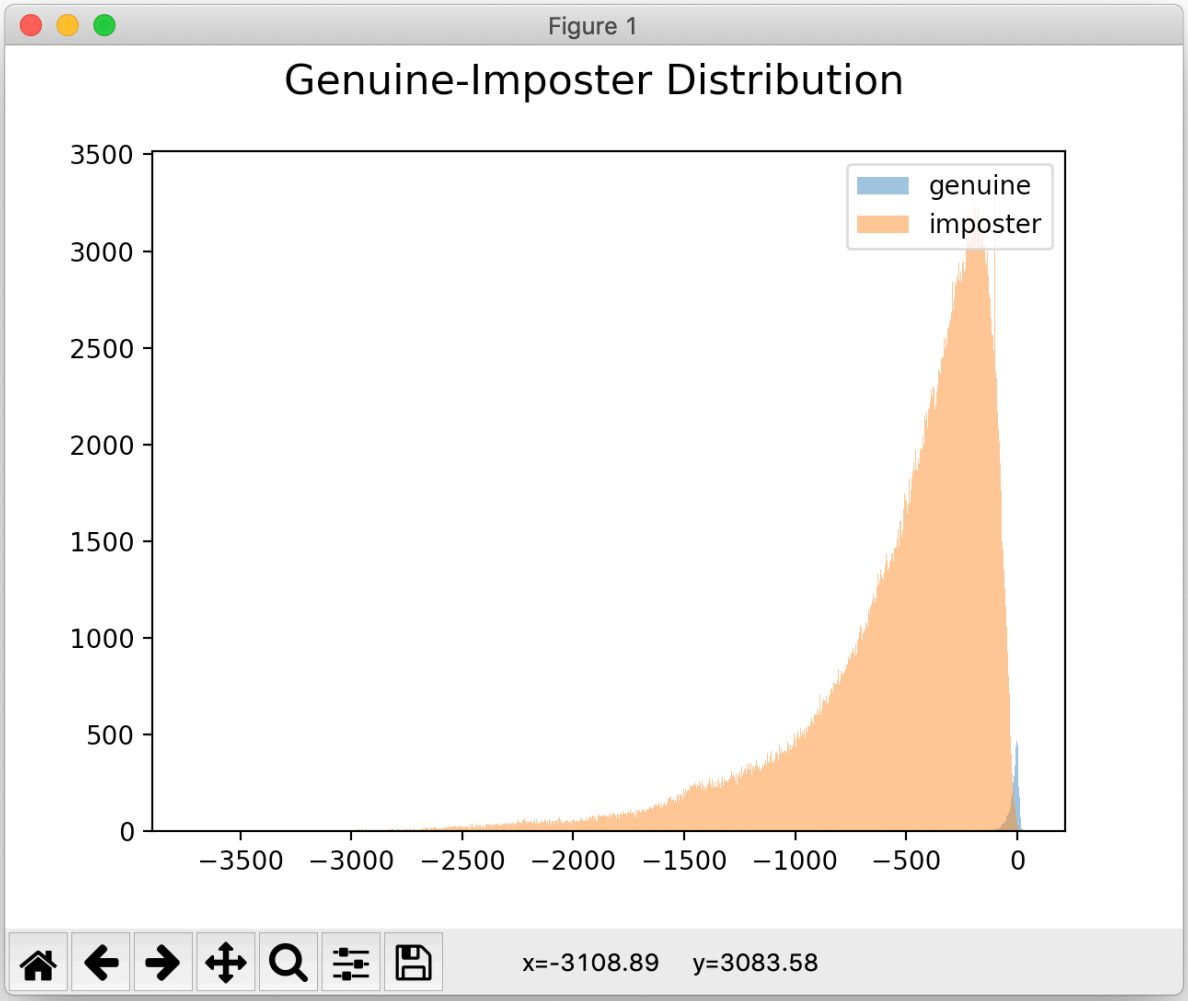
# DATASET 1

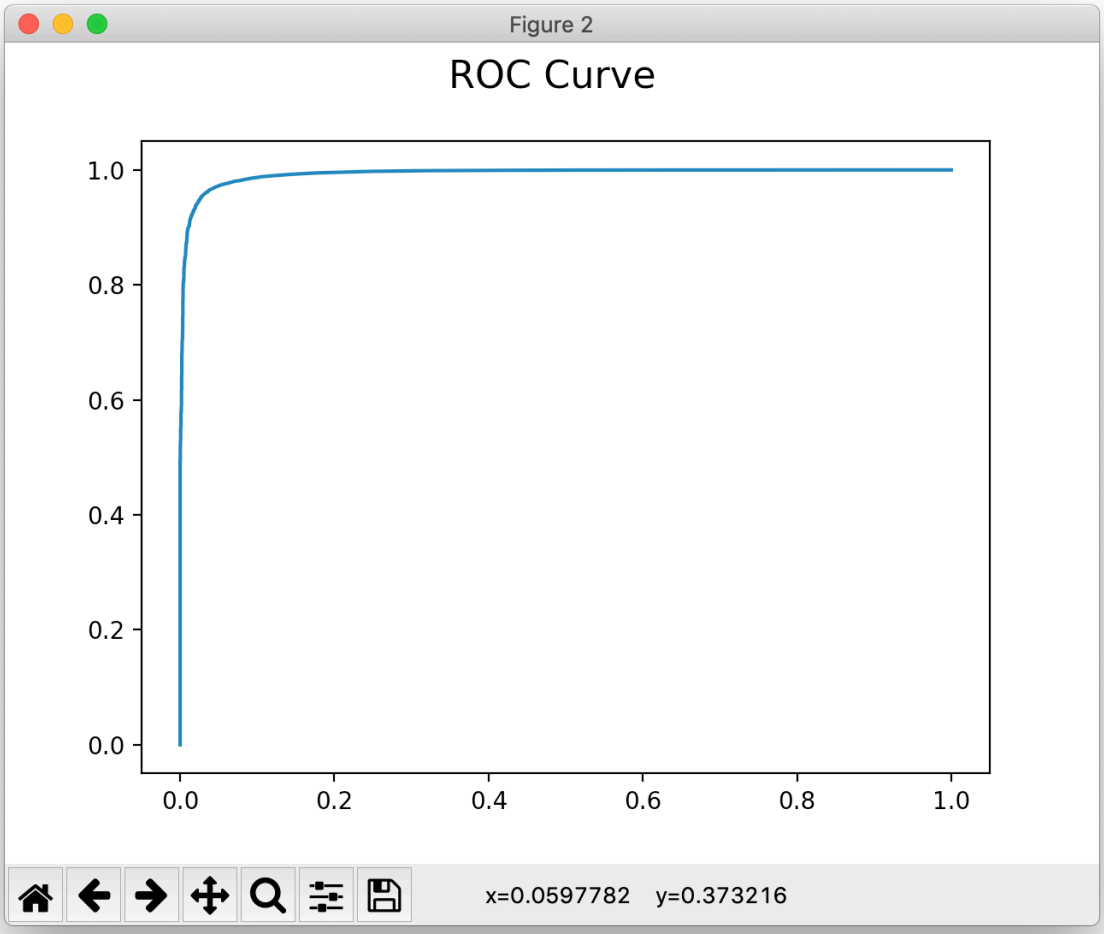
EER and EER Threshold, FAR/FRR values:

| | | | |
|---|---|---|---|
| EER | 3.65% | EER Threshold | −78.9798 |
| FRR | 35.93% | at FAR point | %0.1 |
| FRR | 12.13% | at FAR point | %1 |
| FRR | 1.06% | at FAR point | %10 |

## Genuine and Impostor Score Distribution Plot:



# ROC Curve Plot



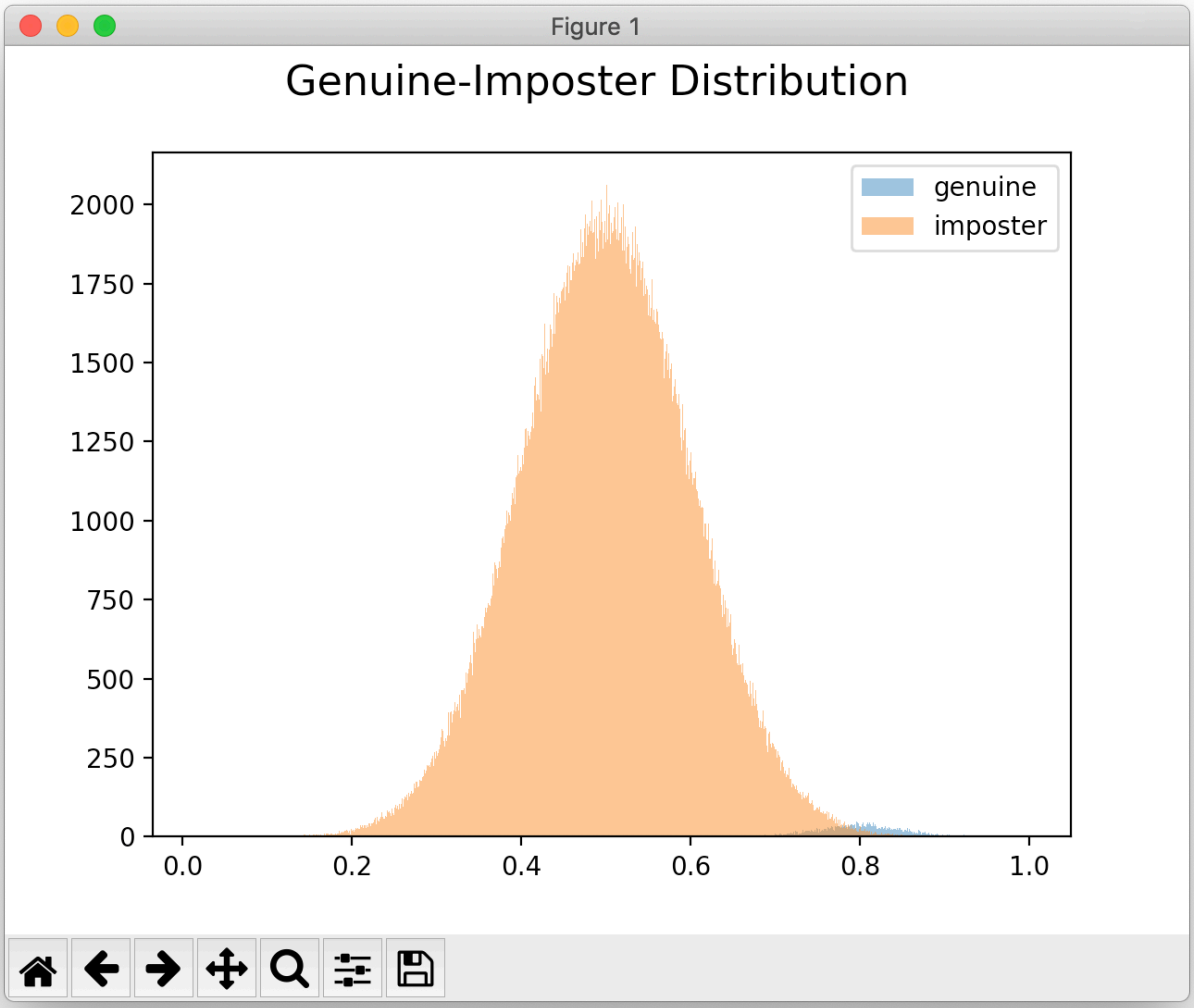

For given dataset, I created 10000 numbers between the minimum and maximum data element. Then calculated FRR and FAR values for each of them for different thresholds. There is a possibility of not finding the optimum threshold where FAR and FRR values are equal. So I calculated the difference between FAR and FRR values for each threshold, then get the absolute value of each result. Minimum of these results is my EER value.

# DATASET 2

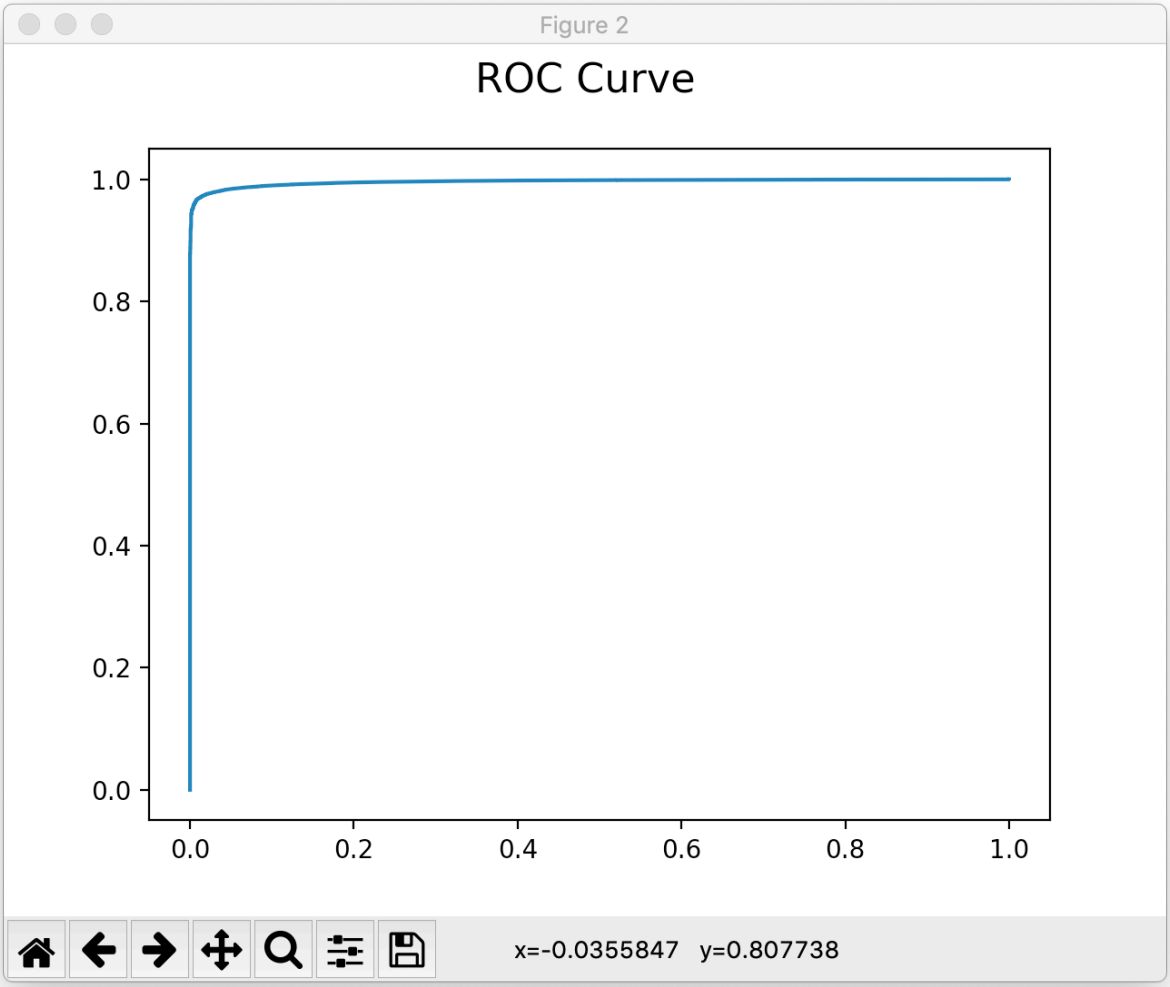
EER and EER Threshold, FAR/FRR values:

| | | | |
|---|---|---|---|
| EER | 2.31% | EER Threshold | 0.7000 |
| FRR | 56.02% | at FAR point | %0.1 |
| FRR | 10.06% | at FAR point | %1 |
| FRR | 0.06% | at FAR point | %10 |

## Genuine and Impostor Score Distribution Plot:



# ROC Curve Plot



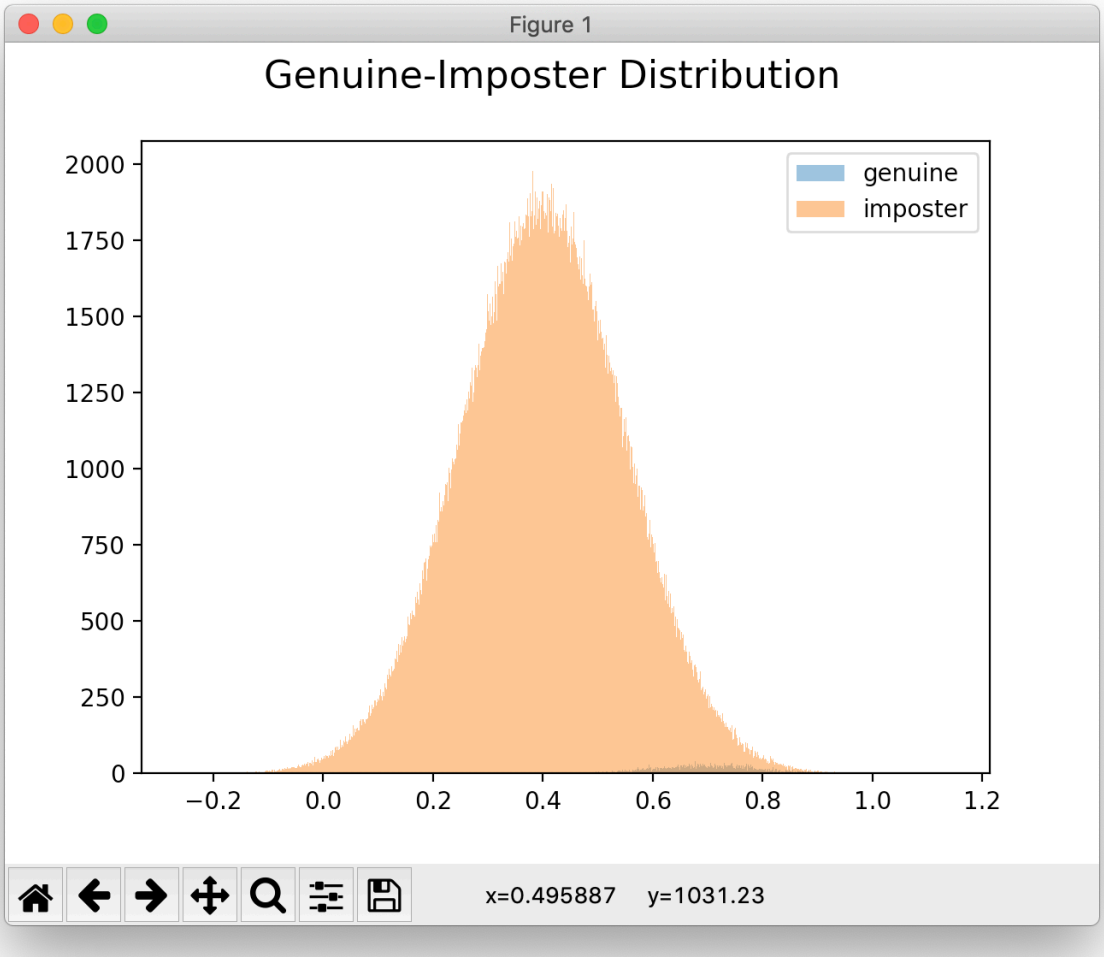

For given dataset, I created 10000 numbers between the minimum and maximum data element. Then calculated FRR and FAR values for each of them. There is a possibility of not finding the optimum threshold where FAR and FRR values are equal. So I calculate the difference between FAR and FRR values for each threshold, then get the absolute value of each result. Minimum of these results is my EER value.

# DATASET 3

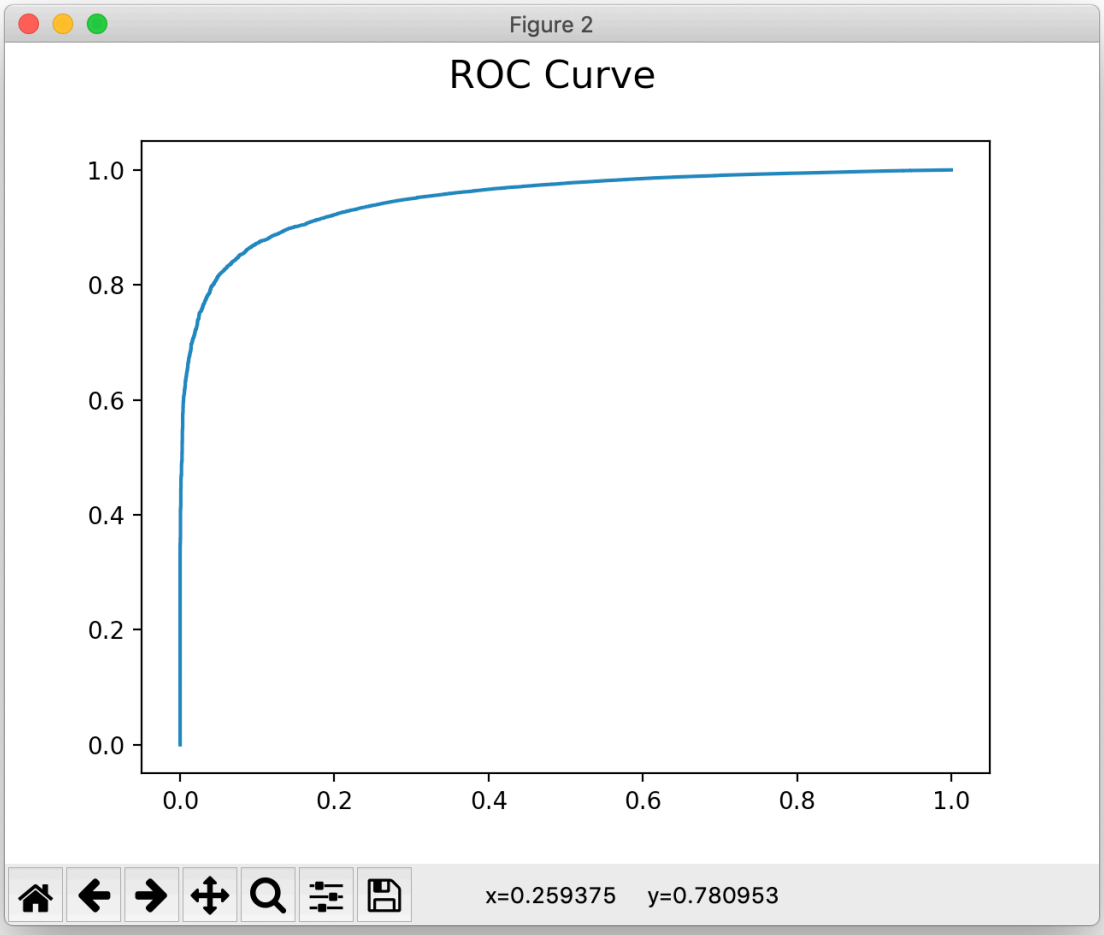
EER and EER Threshold, FAR/FRR values:

| | | | |
|---|---|---|---|
| EER | 11.69% | EER Threshold | 0.5780 |
| FRR | 94.75% | at FAR point | %0.1 |
| FRR | 69.20% | at FAR point | %1 |
| FRR | 14.64% | at FAR point | %10 |

## Genuine and Impostor Score Distribution Plot:



# ROC Curve Plot



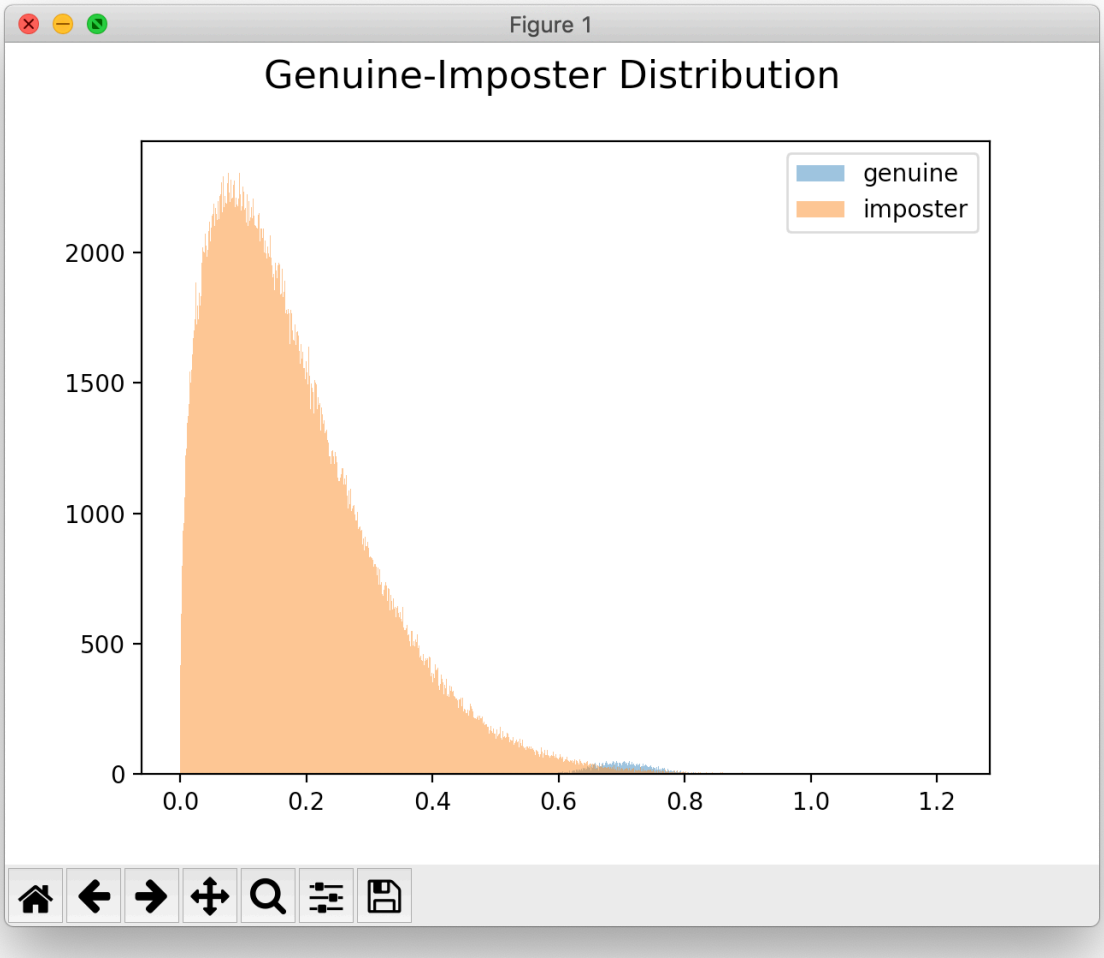

For given dataset, I created 10000 numbers between the minimum and maximum data element. Then calculated FRR and FAR values for each of them. There is a possibility of not finding the optimum threshold where FAR and FRR values are equal. So I calculate the difference between FAR and FRR values for each threshold, then get the absolute value of each result. Minimum of these results is my EER value.

# DATASET 4

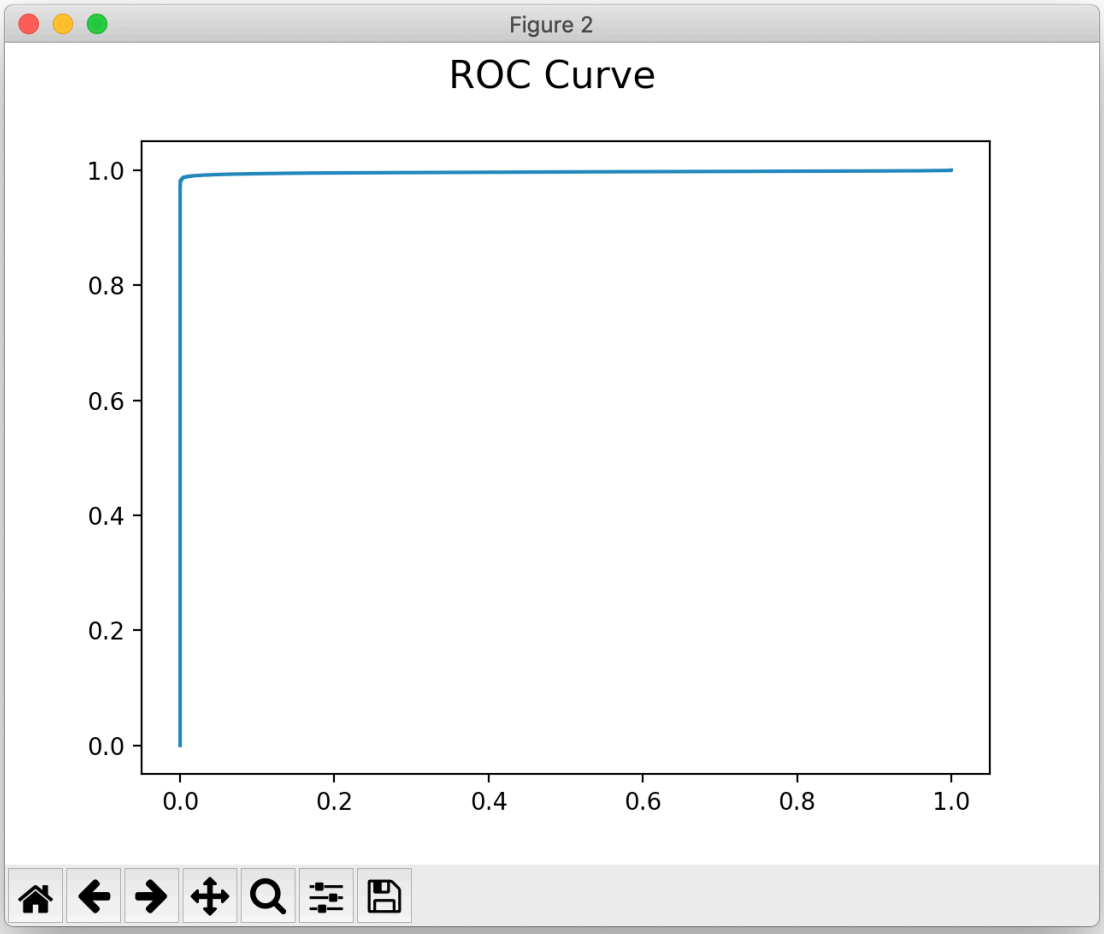
EER and EER Threshold, FAR/FRR values:

| | | | |
|---|---|---|---|
| EER | 1.09% | EER Threshold | 0.5868 |
| FRR | 97.13% | at FAR point | %0.1 |
| FRR | 1.57% | at FAR point | %1 |
| FRR | %0 | at FAR point | %10 |

## Genuine and Impostor Score Distribution Plot:



# ROC Curve Plot




For given dataset, I created 10000 numbers between the minimum and maximum data element. Then calculated FRR and FAR values for each of them. There is a possibility of not finding the optimum threshold where FAR and FRR values are equal. So I calculate the difference between FAR and FRR values for each threshold, then get the absolute value of each result. Minimum of these results is my EER value.