

## PART ONE – IMBALANCED DATA SET

### NEURAL NET – Imbalanced Data Set

Confusion Matrix:

```
[[40  0  0]
 [ 0 27  3]
 [ 0  0 50]]
```

Accuracy Score:

0.975

Class Balanced Accuracy:

0.9477987421383647

Balanced Accuracy:

0.9761904761904763

Scikit Balanced Accuracy Score:

0.9666666666666667

## PART TWO – OVERSAMPLING

### NEURAL NET – Random Oversampling

Confusion Matrix:

```
[[50  0  0]
 [ 0 47  3]
 [ 0  2 48]]
```

Accuracy Score:

0.9666666666666667

### NEURAL NET – SMOTE

Confusion Matrix:

```
[[50  0  0]
 [ 0 47  3]
 [ 0  0 50]]
```

Accuracy Score:

0.98

### NEURAL NET – ADASYN

Confusion Matrix:

```
[[40  0  0]
 [ 0 46  5]
 [ 0  4 46]]
```

Accuracy Score:

0.9361702127659575

## PART THREE – UNDERSAMPLING

### NEURAL NET – Random Undersampling

Confusion Matrix:

```
[[30  0  0]
 [ 0 27  3]
```

```
[ 0  2 28]]  
Accuracy Score:  
0.9444444444444444
```

NEURAL NET – Cluster

Confusion Matrix:

```
[[30  0  0]  
 [ 0 27  3]  
 [ 0  1 29]]
```

Accuracy Score:  
0.9555555555555556

NEURAL NET – Tomek Links

Confusion Matrix:

```
[[40  0  0]  
 [ 0 26  4]  
 [ 0  0 49]]
```

Accuracy Score:  
0.9663865546218487