RandomForest_Classification

Parameters in Classification:

1.Accuray:

What is percentage of overall inputs to the test set?

The total number of test set=134

What is the percentage of correct classification of both(click(1) &not click(0) to totalinput of the test set?

[78   7]

[6 43]2*2

Accuray=$\frac{\text{T(Click)+T(notclick)}}{\text{T(click)+F(notclick)+ F(click)+T(notclick)}}$

=$\frac{78 +43}{78+ 7+6+43}$

=$\frac{121}{134}$ =0.90

2.Recall:it is row-wised

78   7]

[6 43]2*2

1.What is the percentage of correctly classification (click)to totoal sum of input to test set?

Recall= $\frac{\text{T(Click)}}{\text{T(click)+F(click)}}$ = 78/78+7=0.92

2.What is the percentage of correctly classification (notclick)to totoal sum of input to test set?

$$notclick = \frac{T(notclick)}{F(notclick)+T(notclick)}$$

=43/6+43=0.88

3.Precision:- its Columns-wised

78   7]

[6 43]2*2

1.What is the percentage of correctly classification (click) and Wrongly Classified as (Click) in test set?

$$Click= \frac{T(Click)}{T(click)+F(notclick)}$$ =78/78+6=0.92

2.What is the percentage of correctly classification (notclick) and Wrongly Classified as (notClick) in test set?

$$NotClick= \frac{T(notclick)}{F(click)+F(notclick)}$$ =43/7+43=0.86

4.F1_Measure:

1.What is the over all percentage of(click) in test set?

$$=2* \frac{Recall*precision}{Recall+precision}$$ =2*0.92*0.92/0.92+0.92=0.93

2.What is the over all percentage of(notclick) in test set?

$$=2* \frac{Recall*precision}{Recall+precision} =2*0.88*0.86/0.88+0.86=0.86$$

5.Macro_Average:

1.Precision:

1.What is the average percentage of(click&notclick)correctly and wrongly classified in precision?

$$=\frac{precision(click)+precision(notclick)}{2} =0.92+0.88/2=0.9$$

2.Recall:

1.What is the average percentage of(click)correctly classified in recall?

$$=\frac{recall(click)+recall(notclick)}{2} = 0.92+0.88/2=0.90$$

3.F1_Measure:

1.What is the average percentage of f1 measure(overall)?

$$= \frac{F1(click)+f2(notclick)}{2} = 0.93+086/2=0.89$$

6.Weighted Average:

1.what is the sum of product of proportion rate(weight)each class in precision?

=Precision(click)*85/134 +precision(notclick)*49/134

=0.92*85/134 +0.86*49/134 =0.87

2.what is the sum of product of proportion rate(weight)each class in recall?

recall (click)*85/134 +recall (notclick)*49/134

=0.92*85/134+88*49/134=0.88

3.what is the sum of product of proportion rate(weight)each class in f1 measure?

=F1(click)*85/134 +f2(notclick)*49/134

=0.92*85/134+88*49/134=0.88