Logistic Regression

Confusion Matrix:



1.What is the True Purchased of the Model?

37

2.What is the True Not Purchased of the Model?

74

3.What is the Flase Purchased of the Model?

4

4.What is the Flase Not Purchased of the Model?

5

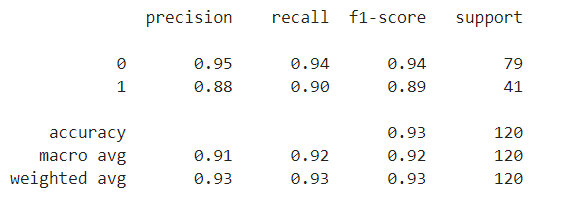
5.What is the Total Count of Purchased?

41

6.What is the Total Count of Not Purchased?

79

CLF Report



What is the Problem Statement?

Classification

What is the Overall Performance of the Model?

0.93

What is the Correct Performance of the Purchased?

0.90

What is the Correct Performance of the Not Purchased?

0.94

What is Correctly and Wrongly Classified of Purchased?

0.88

What is Correctly and Wrongly Classified of NotPurchased?

0.95

What is the f1-score of Purchased?

0.89

What is the f1-score of Not Purchased?

0.94

What is the Macro Avg of Precision

0.91

What is the Macro Avg of Recall?

0.92

What is the Macro Avg of f1-score?

0.92

What is the Weighted Avg of Precision?

0.93

What is the Weighted Avg of Recall?

0.93

What is the Weighted Avg of f1-score?

0.93

What is the Total Count of Purchased?

41

What is the Total Count of Not Purchased?

79

What is the Total Count?

120

MANUAL REPORT OF Social\_Network\_Ad(CLF REPORT)

True Purchased =T(P)=37

True Not Purchased=T(NP)= 74

Flase Purchased=F(P)= 4

Flase Not Purchased=F(NP)= 5

Total Count of Purchased=TOTAL (P)= 41

Total Count of Not Purchased=TOTAL(NP)=79

Total Count=120

**ACCURACY:**

Accuracy=T(NP)+T(P)/ T(NP)+T(P) +F(NP)+F(P)=74+37/74+37+5+4=111/120=0.925

**RECALL OF NOT PURCHASED:**

Recall of NP=T(NP)/ T(NP) +F(NP)

=74/74+5

=0.94

**RECALL OF PURCHASED:**

Recall of P=T(P)/ T(P) +F(P)

=37/37+4

=0.90

**PRECISION** **OF NOT PURCHASED:**

precision of NP=T(NP)/ T(NP) +F(P)

=74/74+4

=0.95

**PRECISION** **OF PURCHASED:**

precision of P=T(P)/ T(P) +F(NP)

=37/37+5

=0.88

**F1-score** **OF NOT PURCHASED:**

F1-score OF NP=2\*Recall(NP)\*Precision(NP)/ Recall(NP)+Precision(NP)

=2\*0.93\*0.95/0.93+0.95

=1.77/1.88

=0.94

**F1-score** **OF PURCHASED:**

F1-score OF P=2\*Recall(P)\*Precision(P)/ Recall(P)+Precision(P)

=2\*0.90\*0.88/0.90+0.88

=1.584/1.78

=0.89

**MACRO AVG OF PRECISION:**

macro avg of precision=precision(NP)+precision(P)/2

=0.95+0.88/2

=0.91

**MACRO AVG OF RECALL:**

macro avg of recall=recall(NP)+recall(P)/2

=0.93+0.90/2

=0.92

**MACRO AVG OF f1-score:**

macro avg of f1-score= f1-score (NP)+ f1-score (P)/2

=0.94+0.89/2

=0.92

**WEIGHTED AVG OF PRECISION:**

Weighted Avg of Precision=Precision(NP)\*Total(NP)/Total Count+ Precision(P)\*Total(P)/Total Count

=0.95\*79/120+0.88\*41/120

=0.95\*0.658+0.88\*0.3416

=0.625+0.3006

=0.93

**WEIGHTED AVG OF RECALL:**

Weighted Avg of Recall=Recall(NP)\*Total(NP)/Total Count+ Recall(P)\*Total(P)/Total Count

=0.93\*79/120+0.90\*41/120

=0.93\*0.658+0.90\*0.3416

=0.6119+0.3074

=0.92

**WEIGHTED AVG OF f1-score:**

Weighted Avg of f1-score= f1-score(NP)\*Total(NP)/Total Count+ f1-score(P)\*Total(P)/Total Count

=0.94\*79/120+0.89\*41/120

=0.94\*0.658+0.89\*0.3416

=0.6185+0.3040

=0.92

This is the overall Evaluation Metrics of Dataset Social\_Network\_Ads with LOGISTIC REGRESSION.

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