PyCM Report

Dataset Type :

- Multi-Class Classification
- Balanced

Note 1 : Recommended statistics for this type of classification highlighted in aqua

Note 2 : The recommender system assumes that the input is the result of classification over the whole data rather than just a part of it. If the confusion matrix is the result of test data classification, the recommendation is not valid.

Confusion Matrix :

Actual \ Predict	carc...	ligh...	mode...	norm...	norm...	norm...	seve...
carc...	1115	1	2	0	0	0	2
ligh...	0	1247	0	0	0	0	0
mode...	3	1	1039	1	0	0	3
norm...	2	0	0	1965	0	0	0
norm...	0	0	0	0	1392	0	0
norm...	0	0	0	0	0	1503	0
seve...	9	0	2	1	0	0	1412

Overall Statistics :

95% CI	(0.99617,0.99826)
ACC Macro	0.9992
AUNP	0.9984
AUNU	0.99823
Bennett S	0.99675
CBA	0.99556
Chi-Squared	57775.73425
Chi-Squared DF	36
Conditional Entropy	0.02797
Cramer V	0.99635

Cross Entropy	2.77868
F1 Macro	0.99686
F1 Micro	0.99722
Gwet AC1	0.99676
Hamming Loss	0.00278
Joint Entropy	2.80664
KL Divergence	1e-05
Kappa	0.99673
Kappa 95% CI	(0.9955,0.99796)
Kappa No Prevalence	0.99443
Kappa Standard Error	0.00063
Kappa Unbiased	0.99673
Lambda A	0.99651
Lambda B	0.99651
Mutual Information	2.75088
NIR	0.20278
Overall ACC	0.99722
Overall CEN	0.00744
Overall J	(6.9563,0.99376)
Overall MCC	0.99673
Overall MCEN	0.0133
Overall RACC	0.14877
Overall RACCU	0.14877
P-Value	None
PPV Macro	0.9968
PPV Micro	0.99722
Pearson C	0.92533
Phi-Squared	5.95626
RCI	0.99
RR	1385.71429
Reference Entropy	2.77867
Response Entropy	2.77884
SOA1(Landis & Koch)	Almost Perfect
SOA2(Fleiss)	Excellent
SOA3(Altman)	Very Good
SOA4(Cicchetti)	Excellent
SOA5(Cramer)	Very Strong
SOA6(Matthews)	Very Strong
Scott PI	0.99673
Standard Error	0.00053
TPR Macro	0.99692
TPR Micro	0.99722
Zero-one Loss	27

Class Statistics :

Class	carcinoma_in_situ	light_dysplastic	moderate_dysplastic	normal_columnar	normal_intermediate	normal_superficiel	severe_dysplastic	Description
ACC	0.99804	0.99979	0.99876	0.99959	1.0	1.0	0.99825	Accuracy
AGF	0.99657	0.99982	0.99614	0.99936	1.0	1.0	0.99563	Adjusted F-score
AGM	0.99762	0.99983	0.99764	0.99953	1.0	1.0	0.99728	Adjusted geometric mean
AM	9	2	-4	0	0	0	-7	Difference between automatic and manual classification
AUC	0.99695	0.99988	0.99595	0.99936	1.0	1.0	0.99548	Area under the ROC curve
AUCI	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	AUC value interpretation

AUPR	0.99157	0.9992	0.99426	0.99898	1.0	1.0	0.99402	Area under the PR curve
BCD	0.00046	0.0001	0.00021	0.0	0.0	0.0	0.00036	Bray-Curtis dissimilarity
BM	0.9939	0.99976	0.9919	0.99872	1.0	1.0	0.99097	Informedness or bookmaker informedness
CEN	0.02137	0.00252	0.01586	0.00325	0	0	0.01549	Confusion entropy
DOR	136444.14286	None	280822.21875	3797853.75	None	None	194644.2	Diagnostic odds ratio
DP	2.83105	None	3.00388	3.62749	None	None	2.91611	Discriminant power
DPI	Fair	None	Good	Good	None	None	Fair	Discriminant power interpretation
ERR	0.00196	0.00021	0.00124	0.00041	0.0	0.0	0.00175	Error rate
F0.5	0.98918	0.99872	0.9954	0.99898	1.0	1.0	0.99549	F0.5 score
F1	0.99155	0.9992	0.99426	0.99898	1.0	1.0	0.99402	F1 score - harmonic mean of precision and sensitivity
F2	0.99394	0.99968	0.99312	0.99898	1.0	1.0	0.99255	F2 score
FDR	0.0124	0.0016	0.00384	0.00102	0.0	0.0	0.00353	False discovery rate
FN	5	0	8	2	0	0	12	False negative/miss/type 2 error
FNR	0.00446	0.0	0.00764	0.00102	0.0	0.0	0.00843	Miss rate or false negative rate
FOR	0.00058	0.0	0.00092	0.00026	0.0	0.0	0.00145	False omission rate
FP	14	2	4	2	0	0	5	False positive/type 1 error/false alarm
FPR	0.00163	0.00024	0.00046	0.00026	0.0	0.0	0.0006	Fall-out or false positive rate
G	0.99156	0.9992	0.99426	0.99898	1.0	1.0	0.99402	G-measure geometric mean of precision and sensitivity
GI	0.9939	0.99976	0.9919	0.99872	1.0	1.0	0.99097	Gini index
GM	0.99695	0.99988	0.99594	0.99936	1.0	1.0	0.99548	G-mean geometric mean of specificity and sensitivity
IBA	0.9911	1.0	0.98478	0.99797	1.0	1.0	0.98322	Index of balanced accuracy
IS	3.09648	2.95721	3.20618	2.30052	2.80083	2.69014	2.76294	Information score
J	0.98325	0.9984	0.98858	0.99797	1.0	1.0	0.9881	Jaccard index
LS	8.55332	7.76621	9.22903	4.92635	6.96839	6.45376	6.78776	Lift score
MCC	0.99045	0.99908	0.99357	0.99872	1.0	1.0	0.99299	Matthews correlation coefficient
MCCI	Very Strong	Very Strong	Very Strong	Very Strong	Very Strong	Very Strong	Very Strong	Matthews correlation coefficient interpretation
MCEN	0.03776	0.00459	0.02838	0.00592	0	0	0.0275	Modified confusion entropy
MK	0.98702	0.9984	0.99524	0.99872	1.0	1.0	0.99502	Markedness
N	8580	8453	8653	7733	8308	8197	8276	Condition negative
NLR	0.00447	0.0	0.00764	0.00102	0.0	0.0	0.00843	Negative likelihood ratio
NLRI	Good	Good	Good	Good	Good	Good	Good	Negative likelihood ratio interpretation

NPV	0.99942	1.0	0.99908	0.99974	1.0	1.0	0.99855	Negative predictive value
OC	0.99554	1.0	0.99616	0.99898	1.0	1.0	0.99647	Overlap coefficient
OOC	0.99156	0.9992	0.99426	0.99898	1.0	1.0	0.99402	Otsuka-Ochiai coefficient
OP	0.99662	0.99968	0.99516	0.99921	1.0	1.0	0.99432	Optimized precision
P	1120	1247	1047	1967	1392	1503	1424	Condition positive or support
PLR	610.12117	4226.5	2146.72087	3862.56863	None	None	1641.25169	Positive likelihood ratio
PLRI	Good	Good	Good	Good	None	None	Good	Positive likelihood ratio interpretation
POP	9700	9700	9700	9700	9700	9700	9700	Population
PPV	0.9876	0.9984	0.99616	0.99898	1.0	1.0	0.99647	Precision or positive predictive value
PRE	0.11546	0.12856	0.10794	0.20278	0.14351	0.15495	0.1468	Prevalence
Q	0.99999	None	0.99999	1.0	None	None	0.99999	Yule Q - coefficient of colligation
RACC	0.01344	0.01655	0.01161	0.04112	0.02059	0.02401	0.02145	Random accuracy
RACCU	0.01344	0.01655	0.01161	0.04112	0.02059	0.02401	0.02145	Random accuracy unbiased
TN	8566	8451	8649	7731	8308	8197	8271	True negative/correct rejection
TNR	0.99837	0.99976	0.99954	0.99974	1.0	1.0	0.9994	Specificity or true negative rate
TON	8571	8451	8657	7733	8308	8197	8283	Test outcome negative
TOP	1129	1249	1043	1967	1392	1503	1417	Test outcome positive
TP	1115	1247	1039	1965	1392	1503	1412	True positive/hit
TPR	0.99554	1.0	0.99236	0.99898	1.0	1.0	0.99157	Sensitivity, recall, hit rate, or true positive rate
Y	0.9939	0.99976	0.9919	0.99872	1.0	1.0	0.99097	Youden index
dInd	0.00475	0.00024	0.00765	0.00105	0.0	0.0	0.00845	Distance index
sInd	0.99664	0.99983	0.99459	0.99926	1.0	1.0	0.99403	Similarity index