

Statistical comparisons considering all the tested databases and a cost of 20 for each misclassified object of the minority class for the paper entitled:

Cost-sensitive pattern-based classification for class imbalance problems

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March 22, 2019

1 Average rankings of Friedman test

Average ranks obtained by each method in the Friedman test.

Algorithm	Ranking
CSPm+CACSP (Our Proposal)	4.4
MetaCost+Adaboost	6.2789
MetaCost+Bagging	6.0053
MetaCost+Bayes Net	6.0579
MetaCost+C4.5	6.7421
MetaCost+kNN	6.1158
MetaCost+Logistic Regression	4.6526
MetaCost+MLP	5.1158
MetaCost+Naïve Bayes	7.1895
MetaCost+Random Forest	4.1053
MetaCost+SVM	9.3368

Table 1: Average Rankings of the algorithms (Friedman)

Friedman statistic (distributed according to chi-square with 10 degrees of freedom): 189.498565.

P-value computed by Friedman Test: 0.

2 Post hoc comparison (Friedman)

P-values obtained in by applying post hoc methods over the results of Friedman procedure.

i	algorithm	$z = (R_0 - R_i)/SE$	p	Finner
10	MetaCost+SVM	10.871344	0	0.005116
9	MetaCost+Naïve Bayes	6.409062	0	0.010206
8	MetaCost+C4.5	5.47942	0	0.01527
7	MetaCost+Adaboost	4.516967	0.000006	0.020308
6	MetaCost+kNN	4.177921	0.000029	0.025321
5	MetaCost+Bayes Net	4.057614	0.00005	0.030307
4	MetaCost+Bagging	3.948245	0.000079	0.035268
3	MetaCost+MLP	2.099897	0.035738	0.040204
2	MetaCost+Logistic Regression	1.137444	0.255353	0.045115
1	CSPm+CACSP (Our Proposal)	0.61247	0.540227	0.05

Table 2: Post Hoc comparison Table for $\alpha = 0.05$ (FRIEDMAN)

Finner's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.045115 .

3 Adjusted P-Values (Friedman)

Adjusted P-values obtained through the application of the post hoc methods (Friedman).

i	algorithm	unadjusted p
1	MetaCost+SVM	0
2	MetaCost+Naïve Bayes	0
3	MetaCost+C4.5	0
4	MetaCost+Adaboost	0.000006
5	MetaCost+kNN	0.000029
6	MetaCost+Bayes Net	0.00005
7	MetaCost+Bagging	0.000079
8	MetaCost+MLP	0.035738
9	MetaCost+Logistic Regression	0.255353
10	CSPm+CACSP (Our Proposal)	0.540227

Table 3: Adjusted p -values (FRIEDMAN) (I)

i	algorithm	unadjusted p	p_{Finner}
1	MetaCost+SVM	0	0
2	MetaCost+Naïve Bayes	0	0
3	MetaCost+C4.5	0	0
4	MetaCost+Adaboost	0.000006	0.000016
5	MetaCost+kNN	0.000029	0.000059
6	MetaCost+Bayes Net	0.00005	0.000083
7	MetaCost+Bagging	0.000079	0.000112
8	MetaCost+MLP	0.035738	0.044471
9	MetaCost+Logistic Regression	0.255353	0.279352
10	CSPm+CACSP (Our Proposal)	0.540227	0.540227

Table 4: Adjusted p -values (FRIEDMAN) (II)