

Statistical comparisons considering all the tested databases and a cost equal to the IR of the tested database 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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1 Average rankings of Friedman test

Average ranks obtained by each method in the Friedman test.

Algorithm	Ranking
CSPm+CACSP (Our Proposal)	4.0579
MetaCost+Adaboost	6.2789
MetaCost+Bagging	5.9211
MetaCost+Bayes Net	6.7842
MetaCost+C4.5	6.6421
MetaCost+kNN	5.8947
MetaCost+Logistic Regression	4.7737
MetaCost+MLP	4.4947
MetaCost+Naïve Bayes	7.3737
MetaCost+Random Forest	4.4368
MetaCost+SVM	9.3421

Table 1: Average Rankings of the algorithms (Friedman)

Friedman statistic (distributed according to chi-square with 10 degrees of freedom): 208.688995.

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	10.980714	0	0.005116
9	MetaCost+Nave Bayes	6.890289	0	0.010206
8	MetaCost+Bayes Net	5.665348	0	0.01527
7	MetaCost+C4.5	5.37005	0	0.020308
6	MetaCost+Adaboost	4.6154	0.000004	0.025321
5	MetaCost+Bagging	3.871686	0.000108	0.030307
4	MetaCost+kNN	3.817001	0.000135	0.035268
3	MetaCost+Logistic Regression	1.487427	0.136902	0.040204
2	MetaCost+MLP	0.907768	0.364001	0.045115
1	MetaCost+Random Forest	0.787462	0.431012	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 ≤ 0.040204 .

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+Nave Bayes	0
3	MetaCost+Bayes Net	0
4	MetaCost+C4.5	0
5	MetaCost+Adaboost	0.000004
6	MetaCost+Bagging	0.000108
7	MetaCost+kNN	0.000135
8	MetaCost+Logistic Regression	0.136902
9	MetaCost+MLP	0.364001
10	MetaCost+Random Forest	0.431012

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

i	algorithm	unadjusted p	p_{Finner}
1	MetaCost+SVM	0	0
2	MetaCost+Nave Bayes	0	0
3	MetaCost+Bayes Net	0	0
4	MetaCost+C4.5	0	0
5	MetaCost+Adaboost	0.000004	0.000008
6	MetaCost+Bagging	0.000108	0.00018
7	MetaCost+kNN	0.000135	0.000193
8	MetaCost+Logistic Regression	0.136902	0.168092
9	MetaCost+MLP	0.364001	0.395191
10	MetaCost+Random Forest	0.431012	0.431012

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