Average AUC results

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Abstract

In this document we show supplementary material for the paper entitled "PBC4cip: A New Contrast Pattern-based Classifier for Class Imbalance Problems" submitted to the journal Knowledge-Based Systems, 2016.

1 Average AUC results obtained by all the tested classifiers

Table 1: Average AUC results obtained by all the tested classifiers. The best result for each imbalance database appears bold faced.

Databases	PBC4cip	iCAEP	LCMine*	HeDex	RUSBoost	RBBoost	CTC	Coverage	OCC	OCSVM	KLPART	kENN
abalone17vs78910	0.8162	0.7328	0.7766	0.6710	**0.8225**	0.7046	0.7317	0.7655	0.5000	0.5000	0.6877	0.5856
abalone19	0.6475	0.5941	0.5548	0.5258	**0.6786**	0.5279	0.6121	0.5640	0.5000	0.5000	0.5255	0.4998
abalone19vs10111213	**0.6316**	0.5778	0.5919	0.5622	0.6227	0.5014	0.5658	0.5542	0.5000	0.5000	0.5597	0.4991
abalone20vs8910	0.7964	0.7167	0.7964	0.5906	0.8040	0.6641	0.7730	**0.8176**	0.5000	0.5000	0.6111	0.5397
abalone21vs8	0.8630	0.8596	**0.8727**	0.7930	0.8604	0.7632	0.8289	0.8289	0.5000	0.5000	0.8263	0.6667
abalone3vs11	0.9990	**1.0000**	0.9979	0.9667	0.9656	0.9656	0.9938	0.9959	**1.0000**	0.9667	0.9667	**1.0000**
abalone9vs18	**0.7998**	0.7704	0.7996	0.7164	0.7789	0.7814	0.7134	0.7666	0.5000	0.5000	0.6905	0.5215
cargood	0.9084	**0.9795**	0.9483	0.8862	0.9528	0.9009	0.9231	0.9231	0.5000	0.5403	0.8999	0.5291
carvgood	0.9546	**0.9868**	0.9412	0.9763	0.9724	0.9671	0.9330	0.9330	0.6000	0.9189	0.9763	0.6769
cleveland0vs4	**0.9067**	0.5938	0.7948	0.6488	0.8400	0.7542	0.7127	0.7440	0.5000	0.7604	0.6671	0.7073
dermatology6	0.9808	**1.0000**	0.9911	0.9985	0.9721	0.9971	0.9882	0.9573	**1.0000**	**1.0000**	0.9985	**1.0000**
ecoli0vs1	0.9761	**0.9867**	0.9761	0.9762	0.9761	0.9726	0.9832	0.9832	0.5000	0.9604	0.9762	0.9667
ecoli01vs235	0.8891	0.8005	0.8605	0.6955	**0.9009**	0.8423	0.8091	0.8205	0.6000	0.8250	0.7509	0.8455
ecoli01vs5	0.9455	0.8432	0.8591	0.8386	**0.9636**	0.8818	0.8409	0.8068	0.5000	0.8500	0.7909	0.9227
ecoli0137vs26	0.8398	0.6500	0.8172	0.7372	0.8118	0.8408	0.8245	0.8445	0.7000	**0.8481**	0.7391	0.8445
ecoli0146vs5	**0.9404**	0.7596	0.9269	0.8538	0.8846	0.8885	0.8115	0.8288	0.6000	0.7750	0.8038	0.9231
ecoli0147vs2356	0.8763	0.8121	0.8593	0.8356	**0.8927**	0.8520	0.8626	0.8841	0.5000	0.6301	0.8223	0.8735
ecoli0147vs56	**0.8959**	0.7719	0.8143	0.8004	0.8408	0.8135	0.8794	0.9090	0.5000	0.6584	0.8237	0.8551
ecoli0234vs5	0.9364	0.8612	0.9196	0.8612	**0.9418**	0.8862	0.8254	0.8447	0.6000	0.8500	0.8084	0.9194
ecoli0267vs35	0.8254	0.7551	0.8304	0.7552	0.8654	0.7653	**0.8779**	**0.8779**	0.5000	0.6250	0.7752	0.8250
ecoli034vs5	0.9583	0.8444	**0.9667**	0.9028	0.9250	0.9222	0.8722	0.8694	0.5000	0.8472	0.8472	0.9222
ecoli0346vs5	**0.9426**	0.8142	0.8818	0.8115	0.8899	0.8865	0.8459	0.8568	0.5000	0.8473	0.8561	0.8973
ecoli0347vs56	0.8883	0.8050	0.8725	0.7742	0.8811	0.8893	**0.9098**	0.9055	0.5000	0.7578	0.7962	0.8514
ecoli046vs5	0.9315	0.8167	0.9567	0.8227	**0.9396**	0.8945	0.8420	0.8393	0.5000	0.8223	0.8173	0.9223
ecoli067vs35	0.8500	0.8025	0.8475	0.8650	0.8575	**0.8675**	**0.8675**	**0.8675**	0.5000	0.6000	0.8350	0.8125
ecoli067vs5	0.8725	0.8150	0.8350	0.7850	0.8875	0.8575	**0.9075**	0.8975	0.5000	0.7250	0.7625	0.7975
ecoli1	0.9118	0.8941	**0.9142**	0.8231	0.9126	0.8967	0.8699	0.8921	0.5000	0.8159	0.8530	0.8831
ecoli2	0.9009	0.8692	0.9067	0.8807	0.8849	0.8617	0.8849	0.8794	0.5000	0.7741	0.8749	**0.9358**
ecoli3	0.8452	0.7661	0.8638	0.7425	0.8714	0.7987	0.8771	**0.9056**	0.5000	0.5000	0.7366	0.7086
ecoli4	0.9167	0.7905	**0.9731**	0.8389	0.9263	0.9139	0.8541	0.8573	0.6000	0.6750	0.8389	0.8484
flareF	0.7167	0.7861	0.8099	0.5799	0.8385	0.5933	**0.8550**	**0.8550**	0.5000	0.4985	0.5572	0.5284
glass0	**0.8632**	0.7809	0.8046	0.7732	0.8557	0.8089	0.7993	0.8067	0.5000	0.5325	0.8128	0.7956
glass0123vs456	0.9439	0.8993	**0.9440**	0.8604	0.9104	0.9116	0.8898	0.8838	0.5000	0.8713	0.8878	0.9086
glass0146vs2	**0.8203**	0.6641	0.7632	0.7156	0.7481	0.6876	0.7544	0.7754	0.5000	0.5000	0.6184	0.5674
glass015vs2	0.6589	0.5516	0.7616	0.5376	**0.7043**	0.6210	0.6575	0.6406	0.5000	0.5000	0.5272	0.5519
glass016vs2	0.6667	0.6207	0.6693	0.5852	0.6217	0.6464	0.7076	**0.7112**	0.5000	0.5000	0.4955	0.5748
glass016vs5	0.9657	**0.9943**	0.9600	0.8443	0.9886	0.8943	0.9400	0.9400	0.8000	0.5000	0.8214	0.8386
glass04vs5	0.9643	**0.9941**	0.9574	**0.9941**	**0.9941**	0.8879	0.9765	0.9765	0.9000	0.6000	**0.9941**	0.8941
glass06vs5	0.9445	0.9797	0.9397	0.9450	0.9900	0.9850	0.9700	0.9700	**1.0000**	0.5000	0.9450	0.8900
glass1	**0.8053**	0.7297	0.7779	0.7200	0.7826	0.7933	0.7057	0.7113	0.5000	0.5000	0.6937	0.7488
glass2	0.7979	0.6767	**0.8068**	0.6568	0.6995	0.6770	0.7846	0.7423	0.5000	0.5000	0.5919	0.5687
glass4	0.9076	0.8375	0.8927	0.9042	**0.9151**	0.9017	0.8977	0.8600	0.5000	0.5333	0.7892	0.8301
glass5	0.9732	**0.9927**	0.9463	0.9476	0.8829	0.8951	0.9561	0.9537	0.8000	0.5000	0.8902	0.8927
glass6	**0.9423**	0.9419	0.9284	0.8698	0.9149	0.9086	0.9176	0.9063	0.5000	0.8752	0.8644	0.8379
haberman	0.5918	0.5645	0.6232	0.5300	0.6336	0.5199	0.6333	**0.6444**	0.5000	0.5000	0.5276	0.5520
iris0	**1.0000**	**1.0000**	0.9900	0.9800	0.9900	0.9083	0.9900	0.9900	**1.0000**	**1.0000**	0.9800	**1.0000**
krvskonevsfifteen	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.9998	0.9561	0.9561	0.7000	**1.0000**	**1.0000**	**1.0000**
krvskthreevseleven	0.9900	0.9738	0.9995	0.9750	0.9967	**1.0000**	0.9470	0.9474	0.8000	0.9691	0.9802	0.9875
krvskzerovseight	0.9728	0.9986	0.9955	0.9826	0.9703	0.9703	0.9703	0.9759	0.5000	0.8897	0.9823	**1.0000**
krvskzerovsfifteen	0.9993	**1.0000**	**1.0000**	**1.0000**	0.9898	**1.0000**	0.9197	0.9540	**1.0000**	**1.0000**	**1.0000**	**1.0000**
krvskzeroonevsdraw	0.9751	0.9898	0.9895	**0.9926**	0.9757	0.9275	0.9341	0.9297	0.5000	0.9081	0.9973	0.9495
led7digit02456789vs1	0.8447	0.8739	0.8970	0.8931	0.8846	0.9080	0.8760	0.8736	0.5000	0.9043	0.9043	**0.9093**
lymphography**	**0.9578**	0.7500	0.8787	0.9464	0.7868	0.7430	0.7044	0.6665	0.7000	0.8500	0.9360	0.6000
newthyroid1	**0.9778**	0.9774	0.9722	0.9774	0.9774	0.9544	0.9548	0.9603	0.6000	0.7714	0.9262	0.9659
newthyroid2	**0.9806**	0.9659	0.9639	0.9687	0.9548	0.9802	0.9437	0.9575	0.5000	0.7571	0.9544	0.9230
pageblocks0	**0.9536**	0.9265	0.9457	0.9128	0.9500	0.9486	0.9461	0.9517	0.5000	0.6989	0.9203	0.8615
pageblocks13vs4	0.9797	0.9676	0.9729	**0.9978**	0.9706	0.9811	0.9921	0.9921	0.5000	0.7155	0.9811	0.9600
pima	0.7320	0.7031	**0.7443**	0.6487	0.7331	0.7131	0.7157	0.7136	0.5000	0.7137	0.6679	0.6979
poker8vs6	0.8357	0.7043	0.6247	0.5158	0.6083	**0.8743**	0.5919	0.5148	0.4000	0.5000	0.5421	0.7250
poker89vs5	**0.7415**	0.5688	0.6000	0.5554	0.5827	0.5159	0.6327	0.6237	0.5000	0.5000	0.5741	0.5000
poker89vs6	0.8405	0.7542	0.6143	0.5090	0.8358	**0.9400**	0.5064	0.5553	0.5000	0.5000	0.5308	0.8000
poker9vs7	**0.9047**	0.5352	0.7597	0.6372	0.6279	0.6479	0.5835	0.6229	0.2000	0.5500	0.6373	0.8500
segment0	**0.9949**	0.9889	0.9937	0.9919	0.9914	0.9932	0.9856	0.9841	0.5000	0.9889	0.9957	0.9889
shuttle2vs5	0.9986	**1.0000**	0.9992	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.9000	0.8767	**1.0000**	**1.0000**
shuttle6vs23	0.9886	**0.9977**	0.9955	**0.9977**	0.9750	**0.9977**	**0.9977**	**0.9977**	0.7000	0.8500	**0.9977**	0.9500
shuttlec0vsc4	0.9991	**1.0000**	**1.0000**	0.9997	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.7000	0.9960	0.9997	0.9960
shuttlec2vsc4	0.9960	**1.0000**	**1.0000**	0.9500	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.7000	0.9500	0.8460	0.9500
vehicle0	**0.9625**	0.9323	0.9440	0.9367	0.9603	0.9407	0.9440	0.9483	0.5000	0.9408	0.9339	0.8999
vehicle1	**0.7723**	0.6964	0.7668	0.6692	0.7399	0.6651	0.7486	0.7234	0.5000	0.5368	0.6839	0.6572
vehicle2	0.9741	0.9467	0.9566	0.9607	**0.9759**	0.9686	0.9466	0.9418	0.5000	0.8984	0.9626	0.9511
vehicle3	0.7715	0.7181	**0.7753**	0.6858	0.7747	0.7059	0.7430	0.7375	0.5000	0.5000	0.7247	0.6674
vowel0	0.9650	0.8994	0.9672	0.9650	0.9578	0.9700	0.9622	0.9461	0.5000	0.7744	0.9522	**0.9883**
winequalityred3vs5	0.7530	0.5926	**0.8155**	0.5397	0.7692	0.4905	0.7251	0.7604	0.4000	0.5000	0.5868	0.4993
winequalityred4	**0.7243**	0.5544	0.5927	0.5305	0.6189	0.5346	0.6757	0.6360	0.5000	0.5000	0.5796	0.4990
winequalityred8vs6	**0.7815**	0.6898	0.7818	0.6458	0.7745	0.6653	0.7447	0.7627	0.5000	0.5000	0.6169	0.4969
winequalityred8vs67	0.7188	0.5928	0.7141	0.5393	**0.7384**	0.5988	0.7257	0.7287	0.5000	0.5000	0.5119	0.4982
winequalitywhite3vs7	**0.7841**	0.5688	0.7227	0.4926	0.7438	0.6398	0.6568	0.6523	0.5000	0.5000	0.6631	0.5244
winequalitywhite39vs5	**0.7186**	0.5525	0.5809	0.5531	0.6291	0.5542	0.6718	0.6639	0.5000	0.5000	0.6094	0.4993
winequalitywhite9vs4	0.8263	0.7938	0.8351	0.6876	0.7443	0.7845	0.7831	0.7893	0.6000	0.5000	0.7938	**0.9000**
wisconsin	0.9645	0.9406	**0.9791**	0.9462	0.9591	0.9606	0.9449	0.9523	0.5000	0.9698	0.9490	0.9708
yeast0256vs3789	0.7883	0.7910	0.7723	0.6829	0.7824	0.7383	0.7985	**0.8013**	0.5000	0.5486	0.7037	0.7661
yeast02579vs368	0.8883	0.8738	0.8971	0.8557	0.9055	0.8987	**0.9173**	0.9129	0.5000	0.8553	0.8488	0.9017
yeast0359vs78	**0.7561**	0.7054	0.7367	0.6239	0.7245	0.6147	0.7035	0.7337	0.5000	0.6067	0.6252	0.7025
yeast05679vs4	0.7950	0.7144	0.7988	0.6497	**0.8447**	0.7682	0.7630	0.7502	0.5000	0.5000	0.6707	0.6850
yeast1	**0.7394**	0.7326	0.7116	0.6643	0.7096	0.7057	0.7090	0.7101	0.5000	0.5753	0.6779	0.6387
yeast1vs7	**0.8269**	0.6139	0.7014	0.5852	0.7432	0.7112	0.6974	0.6489	0.5000	0.5000	0.6473	0.5562
yeast1289vs7	**0.7349**	0.6252	0.6408	0.5648	0.7499	0.6085	0.6559	0.6562	0.5000	0.5000	0.5615	0.5156
yeast1458vs7	**0.6642**	0.5973	0.6511	0.5100	0.6330	0.5910	0.5241	0.5598	0.5000	0.5000	0.4903	0.4940
yeast2vs4	**0.9409**	0.8374	0.9175	0.8255	0.9131	0.8858	0.9393	0.9247	0.5000	0.7271	0.8381	0.8406
yeast2vs8	**0.8296**	0.7413	0.6588	0.6174	0.7817	0.7924	0.7481	0.7546	0.5000	0.7739	0.5805	0.7739
yeast3	0.9242	0.9012	**0.9249**	0.8442	0.9162	0.8619	0.9229	0.9262	0.5000	0.7224	0.8471	0.8296
yeast4	**0.8514**	0.7568	0.7833	0.6724	0.8200	0.7268	0.8450	0.8333	0.5000	0.5000	0.6611	0.5949
yeast5	0.9483	0.9215	0.9510	0.8670	**0.9604**	0.9122	0.9517	0.9552	0.5000	0.5000	0.8927	0.8479
yeast6	0.8226	0.8239	0.8323	0.7335	0.8382	0.8005	**0.8483**	0.8625	0.5000	0.5000	0.7576	0.7520
zoo3	**0.8958**	0.7745	0.8637	0.7845	0.4842	0.7897	0.5929	0.6079	0.7000	0.7947	0.6789	0.8000
Promedio	**0.8715**	0.8089	0.8499	0.7838	0.8505	0.8180	0.8285	0.8299	0.5611	0.6852	0.7825	0.7803
SD	0.1021	0.1429	0.1217	0.1599	0.1216	0.1438	0.1271	0.1278	0.1431	0.1806	0.1545	0.1693

* It is a label to refer to the SMOTE-TL+LCMine classifier.
** It is a label to refer to the lymphography normalfibrosis database.