Average GM 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 GM results obtained by all the tested classifiers

Table 1: Average GM 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	0.8106	0.6984	0.7632	0.5934	**0.8216**	0.6484	0.7263	0.7634	0.0000	0.0000	0.6191	0.3708
abalone19	0.5803	0.3552	0.3377	0.1565	**0.6635**	0.1622	0.5337	0.4653	0.0000	0.0000	0.1564	0.0000
abalone19vs10111213	**0.5910**	0.3914	0.4387	0.3896	0.5344	0.0744	0.5222	0.5250	0.0000	0.0000	0.2908	0.0000
abalone20vs8910	0.6947	0.5726	0.7734	0.3330	0.7871	0.4451	0.7579	**0.8043**	0.0000	0.0000	0.3604	0.1265
abalone21vs8	0.8555	0.8468	**0.8642**	0.6854	0.8517	0.7069	0.8194	0.8194	0.0000	0.0000	0.7999	0.5097
abalone3vs11	0.9990	**1.0000**	0.9979	0.9633	0.9623	0.9623	0.9938	0.9959	0.0000	0.9633	0.9633	**1.0000**
abalone9vs18	**0.7878**	0.7174	0.7947	0.6561	0.7693	0.7492	0.7054	0.7646	0.0000	0.0000	0.6094	0.0943
cargood	0.9037	**0.9793**	0.9475	0.8768	0.9518	0.8950	0.9199	0.9199	0.0000	0.2230	0.8936	0.2158
carvgood	0.9535	**0.9867**	0.9387	0.9756	0.9719	0.9662	0.9305	0.9305	0.0000	0.9142	0.9756	0.5940
cleveland0vs4	**0.9030**	0.1969	0.7548	0.4436	0.8196	0.7052	0.6851	0.7166	0.0000	0.6260	0.5487	0.5791
dermatology6	0.9805	**1.0000**	0.9911	0.9985	0.9705	0.9970	0.9881	0.9555	0.0000	**1.0000**	0.9985	**1.0000**
ecoli0vs1	0.9757	**0.9864**	0.9757	0.9760	0.9758	0.9723	0.9831	0.9831	0.0000	0.9587	0.9760	0.9653
ecoli01vs235	0.8800	0.7842	0.8510	0.6272	**0.8979**	0.8162	0.8043	0.8137	0.0000	0.7683	0.7158	0.8261
ecoli01vs5	0.9436	0.8244	0.8509	0.8207	**0.9628**	0.8709	0.8263	0.7991	0.0000	0.8293	0.7492	0.9173
ecoli0137vs26	0.7389	0.3414	0.7102	0.5314	0.7044	0.7338	0.7151	0.7365	0.0000	**0.7401**	0.5365	0.7365
ecoli0146vs5	**0.9388**	0.6436	0.9250	0.8358	0.8744	0.8772	0.7783	0.7971	0.0000	0.6560	0.7705	0.9127
ecoli0147vs2356	0.8744	0.7921	0.8526	0.8277	**0.8896**	0.8405	0.8565	0.8774	0.0000	0.4529	0.8096	0.8648
ecoli0147vs56	0.8934	0.7359	0.8037	0.7619	0.8352	0.7888	0.8761	**0.9073**	0.0000	0.4973	0.8026	0.8354
ecoli0234vs5	0.9348	0.8489	0.9119	0.8493	**0.9398**	0.8754	0.8083	0.8347	0.0000	0.8293	0.7896	0.9097
ecoli0267vs35	0.8107	0.7025	0.8146	0.7158	0.8555	0.7329	**0.8673**	**0.8673**	0.0000	0.3828	0.7507	0.7984
ecoli034vs5	**0.9567**	0.8148	0.9658	0.8937	0.9225	0.9126	0.8635	0.8606	0.0000	0.8126	0.8221	0.9126
ecoli0346vs5	**0.9409**	0.7790	0.8786	0.7911	0.8864	0.8798	0.8412	0.8529	0.0000	0.8265	0.8494	0.8855
ecoli0347vs56	0.8830	0.7597	0.8675	0.7433	0.8748	0.8819	**0.9060**	0.9020	0.0000	0.7027	0.7714	0.8322
ecoli046vs5	0.9291	0.7866	**0.9551**	0.8054	0.9376	0.8835	0.8315	0.8287	0.0000	0.7915	0.8004	0.9119
ecoli067vs35	0.8180	0.7679	0.8205	0.7665	0.8260	0.7665	**0.8366**	**0.8366**	0.0000	0.2732	0.7332	0.6997
ecoli067vs5	0.8700	0.7892	0.8269	0.6634	0.8837	0.8454	**0.9032**	0.8940	0.0000	0.6560	0.6392	0.7685
ecoli1	0.9100	0.8937	0.9121	0.8173	**0.9106**	0.8959	0.8689	0.8907	0.0000	0.8052	0.8481	0.8782
ecoli2	0.8991	0.8614	0.9056	0.8768	0.8829	0.8536	0.8837	0.8770	0.0000	0.7471	0.8733	**0.9328**
ecoli3	0.8410	0.7513	0.8620	0.7177	0.8698	0.7803	0.8729	**0.9027**	0.0000	0.0000	0.7004	0.6569
ecoli4	0.9140	0.7530	**0.9726**	0.8189	0.9223	0.9088	0.8440	0.8473	0.0000	0.5146	0.8189	0.8182
flareF	0.6855	0.7711	0.8092	0.4139	**0.8367**	0.4641	0.8535	0.8535	0.0000	0.0000	0.3263	0.2030
glass0	**0.8609**	0.7763	0.7933	0.7647	0.8539	0.8031	0.7931	0.8017	0.0000	0.2545	0.8052	0.7945
glass0123vs456	0.9422	0.8961	**0.9423**	0.8540	0.9094	0.9091	0.8859	0.8817	0.0000	0.8590	0.8860	0.9051
glass0146vs2	**0.8163**	0.5517	0.7466	0.6741	0.7313	0.5642	0.7377	0.7583	0.0000	0.0000	0.4139	0.3097
glass015vs2	0.6279	0.2631	**0.7317**	0.1579	0.6871	0.4621	0.5673	0.5583	0.0000	0.0000	0.3010	0.2136
glass016vs2	0.6284	0.5544	0.6499	0.4197	0.5931	0.5093	**0.6886**	0.6853	0.0000	0.0000	0.2075	0.3140
glass016vs5	0.9649	**0.9942**	0.9591	0.7365	0.9885	0.7942	0.9367	0.9367	0.0000	0.0000	0.7307	0.7336
glass04vs5	0.9634	**0.9940**	0.9560	**0.9940**	**0.9940**	0.8724	0.9757	0.9757	0.0000	0.2000	0.9940	0.8786
glass06vs5	0.9426	0.9795	0.9368	0.9364	**0.9899**	0.9847	0.9692	0.9692	0.0000	0.0000	0.9364	0.8727
glass1	**0.8020**	0.7187	0.7708	0.7133	0.7824	0.7792	0.6983	0.7082	0.0000	0.0000	0.6897	0.7314
glass2	0.7884	0.5631	**0.7977**	0.5229	0.6724	0.5460	0.7730	0.7297	0.0000	0.0000	0.3607	0.3295
glass4	**0.8985**	0.8200	0.8852	0.8925	0.9063	0.8895	0.8896	0.7588	0.0000	0.1155	0.7471	0.8043
glass5	0.9726	**0.9926**	0.9442	0.9390	0.7823	0.7951	0.9542	0.9518	0.0000	0.0000	0.7926	0.7926
glass6	**0.9409**	0.9400	0.9270	0.8606	0.9137	0.9033	0.9161	0.9042	0.0000	0.8655	0.8561	0.8228
haberman	0.5820	0.5373	0.6185	0.4561	0.6184	0.2923	0.6320	**0.6425**	0.0000	0.0000	0.4920	0.4730
iris0	**1.0000**	**1.0000**	0.9897	0.9789	0.9897	0.0000	0.9897	0.9897	0.0000	**1.0000**	0.9789	**1.0000**
krvskonevsfifteen	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.9998	0.9552	0.9552	0.0000	**1.0000**	1.0000	1.0000
krvskthreevseleven	0.9899	0.9720	0.9995	0.9732	0.9967	**1.0000**	0.9465	0.9469	0.0000	0.9680	0.9797	0.9873
krvskzerovseight	0.9724	0.9986	0.9954	0.9819	0.9698	**1.0000**	0.9696	0.9754	0.0000	0.8793	0.9816	**1.0000**
krvskzerovsfifteen	0.9993	**1.0000**	**1.0000**	**1.0000**	0.9898	**1.0000**	0.9119	0.9492	0.0000	**1.0000**	**1.0000**	**1.0000**
krvskzeroonevsdraw	0.9748	0.9897	0.9895	0.9925	0.9754	0.9235	0.9334	0.9291	0.0000	0.9029	**0.9973**	0.9478
led7digit02456789vs1	0.8326	0.8717	0.8927	0.8855	0.8814	0.9025	0.8735	0.8710	0.0000	0.8991	0.8993	**0.9036**
lymphography**	**0.9568**	0.5414	0.7818	0.9389	0.6964	0.5354	0.5120	0.4639	0.0000	0.7414	0.9282	0.2000
newthyroid1	**0.9774**	0.9770	0.9717	0.9770	0.9767	0.9529	0.9539	0.9595	0.0000	0.7291	0.9238	0.9647
newthyroid2	**0.9801**	0.9643	0.9629	0.9677	0.9544	0.9798	0.9429	0.9569	0.0000	0.7051	0.9529	0.9181
pageblocks0	**0.9535**	0.9255	0.9456	0.9103	0.9499	0.9482	0.9460	0.9516	0.0000	0.6292	0.9184	0.8524
pageblocks13vs4	0.9794	0.9666	0.9725	**0.9977**	0.9700	0.9803	0.9921	0.9921	0.0000	0.6281	0.9803	0.9578
pima	0.7314	0.6993	**0.7386**	0.6423	0.7321	0.7040	0.7099	0.7114	0.0000	0.6898	0.6650	0.6812
poker8vs6	**0.8223**	0.6350	0.4085	0.0986	0.5107	0.7729	0.4756	0.2937	0.0000	0.0000	0.1991	0.6464
poker89vs5	**0.7245**	0.2480	0.4739	0.2673	0.5004	0.0892	0.5907	0.5745	0.0000	0.0000	0.3035	0.0000
poker89vs6	0.8351	0.7091	0.5081	0.0882	0.8299	**0.9338**	0.4764	0.5286	0.0000	0.0000	0.1781	0.7526
poker9vs7	**0.8989**	0.1399	0.6523	0.3312	0.4407	0.3414	0.4222	0.4643	0.0000	0.1414	0.3384	0.7414
segment0	0.9949	0.9888	0.9937	0.9919	0.9914	0.9931	0.9855	0.9840	0.0000	0.9888	**0.9957**	0.9888
shuttle2vs5	0.9986	**1.0000**	0.9992	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.0000	0.8666	**1.0000**	**1.0000**
shuttle6vs23	0.9885	**0.9977**	0.9954	**0.9977**	0.9742	**0.9977**	**0.9977**	**0.9977**	0.0000	0.8243	**0.9977**	0.9414
shuttlec0vsc4	0.9991	**1.0000**	**1.0000**	0.9997	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.0000	0.9960	0.9997	0.9960
shuttlec2vsc4	0.9960	**1.0000**	**1.0000**	0.9414	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.0000	0.9414	0.7374	0.9414
vehicle0	**0.9621**	0.9319	0.9428	0.9360	0.9601	0.9397	0.9436	0.9481	0.0000	0.9402	0.9334	0.8978
vehicle1	**0.7696**	0.6728	0.7589	0.6492	0.7350	0.6254	0.7473	0.7217	0.0000	0.2743	0.6734	0.6260
vehicle2	0.9739	0.9456	0.9556	0.9602	**0.9758**	0.9682	0.9462	0.9414	0.0000	0.8953	0.9625	0.9508
vehicle3	**0.7689**	0.7012	0.7665	0.6723	0.7736	0.6819	0.7408	0.7332	0.0000	0.0000	0.7169	0.6316
vowel0	0.9638	0.8942	0.9665	0.9627	0.9559	0.9685	0.9615	0.9439	0.0000	0.7342	0.9497	**0.9880**
winequalityred3vs5	0.6483	0.2807	0.7170	0.1388	**0.7537**	0.0000	0.7048	0.7478	0.0000	0.0000	0.2802	0.0000
winequalityred4	**0.7046**	0.3757	0.4520	0.2678	0.5758	0.2347	0.6685	0.6232	0.0000	0.0000	0.4141	0.0000
winequalityred8vs6	**0.7730**	0.5455	0.7608	0.4913	0.7552	0.4495	0.7220	0.7563	0.0000	0.0000	0.4499	0.0000
winequalityred8vs67	0.6952	0.3504	0.6727	0.1979	**0.7271**	0.3527	0.7180	0.7208	0.0000	0.0000	0.0979	0.0000
winequalitywhite3vs7	**0.7540**	0.2396	0.6124	0.0000	0.7292	0.4689	0.6293	0.6265	0.0000	0.0000	0.5165	0.1000
winequalitywhite39vs5	**0.6740**	0.2660	0.3561	0.2140	0.5910	0.2671	0.6362	0.6277	0.0000	0.0000	0.4189	0.0000
winequalitywhite9vs4	0.7323	0.5969	0.7382	0.3969	0.5414	0.5840	0.6971	0.7039	0.0000	0.0000	0.5969	**0.8000**
wisconsin	0.9644	0.9396	**0.9790**	0.9460	0.9588	0.9603	0.9446	0.9521	0.0000	0.9697	0.9487	0.9707
yeast0256vs3789	0.7823	0.7835	0.7555	0.6327	0.7670	0.7029	0.7920	**0.7973**	0.0000	0.3025	0.6630	0.7339
yeast02579vs368	0.8850	0.8684	0.8940	0.8464	0.9041	0.8939	**0.9157**	0.9113	0.0000	0.8418	0.8412	0.8975
yeast0359vs78	**0.7522**	0.6872	0.7265	0.5472	0.7139	0.4965	0.6949	0.7208	0.0000	0.4595	0.5457	0.6447
yeast05679vs4	0.7856	0.6801	0.7935	0.5782	**0.8424**	0.7429	0.7594	0.7371	0.0000	0.0000	0.6149	0.6106
yeast1	**0.7379**	0.7306	0.7099	0.6517	0.7036	0.6931	0.7082	0.7093	0.0000	0.4192	0.6717	0.6015
yeast1vs7	**0.8242**	0.4571	0.6796	0.4031	0.7305	0.6608	0.6793	0.6155	0.0000	0.0000	0.5198	0.2763
yeast1289vs7	0.7061	0.4793	0.5686	0.4006	**0.7428**	0.4640	0.6211	0.6261	0.0000	0.0000	0.3510	0.0814
yeast1458vs7	**0.6553**	0.5271	0.5979	0.1602	0.6027	0.4152	0.4761	0.5335	0.0000	0.0000	0.0788	0.0000
yeast2vs4	**0.9397**	0.8238	0.9168	0.8121	0.9112	0.8809	0.9378	0.9228	0.0000	0.6551	0.8292	0.8237
yeast2vs8	**0.8215**	0.6912	0.5143	0.4370	0.7596	0.7501	0.7061	0.7230	0.0000	0.7283	0.2661	0.7283
yeast3	0.9239	0.8999	0.9249	0.8357	0.9162	0.8565	0.9225	**0.9255**	0.0000	0.6639	0.8393	0.8160
yeast4	**0.8469**	0.7257	0.7656	0.5990	0.8166	0.6795	0.8419	0.8309	0.0000	0.0000	0.5707	0.4270
yeast5	0.9468	0.9194	0.9503	0.8560	**0.9600**	0.9080	0.9513	0.9543	0.0000	0.0000	0.8852	0.8333
yeast6	0.8062	0.8002	0.8191	0.6789	0.8308	0.7645	0.8408	**0.8561**	0.0000	0.0000	0.7097	0.6997
zoo3	**0.8884**	0.5791	0.7625	0.5896	0.0000	0.5896	0.3695	0.3926	0.0000	0.5947	0.3835	0.6000
Average	**0.8602**	0.7445	0.8217	0.6955	0.8293	0.7374	0.8093	0.8093	0.0000	0.4450	0.6968	0.6620
SD	**0.1144**	0.2278	0.1618	0.2698	0.1614	0.2516	0.1519	0.1560	0.0000	0.3916	0.2554	0.3242

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