Supplementary materials related to "AdaBoost.SDM: Similarity and Dissimilarity-based Manifold Regularized Adaptive Boosting Algorithm"

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Table 1: The average test-set F_1-score of the algorithms across 26 datasets. $\bullet/\circ$ shows whether AdaBoost.SDM is statistically superior/inferior to the compared algorithm (using one-sided, paired t-test at $P < 0.05$ significance level)

dataset	AdaBoost	LapRLS	LapSVM	lowLapSVM	TabNet	AdaBoostSDM
climate	94.7±0.8 ●	91.2±5.8 ●	95.5±0.0 ○	95.5±0.0 ○	94.3±1.1 ●	95.2±0.5
metal	9.3±7.6	16.7±13.5 ○	4.3±7.1 ●	4.2±8.2	5.3±8.6	8.6±8.6
breast-c	45.0±8.8	38.2±13.5 ●	4.1±12.3 ●	6.5±15.4 ●	44.1±9.9	46.4±8.3
liver	94.3±1.6 ●	68.8±10.6 ●	89.2±13.0 ●	92.6±7.8	95.2±1.2	95.5±0.5
ilpd	25.5±11.8 ○	32.1±8.7 ○	16.1±18.2	18.4±15.5	8.1±8.5 ●	20.9±13.3
heart-l	52.5±13.8 ●	49.3±11.0 ●	61.9±9.5	58.3±13.0	54.6±7.1	56.6±11.9
marketing	6.4±6.7 ○	23.2±11.5 ○	32.0±8.3 ○	22.1±13.3 ○	31.2±7.3 ○	3.2±5.9
heart-h	49.6±11.0	38.2±18.3 ●	1.5±6.5 ●	2.2±7.0 ●	40.4±10.7 ●	50.9±9.1
chatfield	89.6±2.4	90.4±3.1	89.1±2.6 ●	88.5±2.8 ●	89.6±2.8	90.0±3.0
seismic	95.8±4.4 ●	93.6±6.1 ●	96.8±2.8	96.0±2.8 ●	97.6±2.1	97.0±2.5
thoracic-surgery	91.5±0.9	86.8±6.5 ●	87.3±11.5	91.8±0.5 ○	91.1±1.1 ●	91.6±0.4
profb	31.7±5.6	23.7±17.2	0.0±0.0 ●	0.8±3.3 ●	44.3±12.4 ○	29.9±7.4
australian	83.6±2.1	85.0±1.7 ○	83.5±3.7	84.4±1.9	82.7±3.0 ●	84.0±2.0
glass	79.4±5.6	77.2±3.7	78.6±4.9	79.0±4.1	64.5±13.8 ●	79.8±5.0
dmft	55.1±5.5	53.1±9.8	62.2±6.9 ○	61.0±7.6 ○	50.2±9.0 ●	54.3±6.1
credit	82.1±1.4	76.5±3.3 ●	82.5±0.7 ○	82.7±0.7 ○	80.1±2.4 ●	82.0±1.2
kc2	53.6±6.5 ●	46.3±9.5 ●	37.0±15.0 ●	20.5±21.2 ●	32.8±13.5 ●	57.8±9.7
cmc	57.0±3.5	58.4±3.3 ○	40.6±23.8 ●	43.5±22.2 ●	58.5±4.7	57.0±3.5
primary-tumor	65.6±6.3	63.6±5.5	9.8±20.8 ●	17.0±25.5 ●	64.7±7.2	66.0±7.0
diabetes	62.3±3.7	61.8±3.2	27.5±28.9 ●	49.2±19.6 ●	61.4±3.7	61.9±3.3
sa-heart	53.1±7.7	52.4±4.4	7.2±15.8 ●	14.6±20.4 ●	47.7±7.3 ●	51.5±9.0
ecoli	98.2±2.0 ●	96.0±3.9 ●	96.9±3.3 ●	96.5±2.9 ●	98.0±1.6 ●	99.0±1.3
spect	90.3±1.6	82.4±3.3 ●	88.3±0.0 ●	88.3±0.2 ●	85.4±3.9 ●	90.2±1.9
apnea	94.7±1.1 ○	91.4±7.9	94.7±1.8	95.7±1.2 ○	97.0±1.0 ○	94.0±1.0
sensory	71.2±2.7	66.8±4.0 ●	66.2±10.9 ●	65.9±8.6 ●	74.3±2.8 ○	71.3±2.8
backache	19.5±16.2 ○	20.8±15.1 ○	1.4±5.9 ●	1.0±4.4 ●	20.8±13.1 ○	9.6±12.9
win-loss	6-4	12-6	15-4	14-6	12-5	-

Table 2: The average test-set ROC AUC of the algorithms across 26 datasets. $\bullet/\circ$ shows whether AdaBoost.SDM is statistically superior/inferior to the compared algorithm (using one-sided, paired t-test at $P < 0.05$ significance level)

dataset	AdaBoost	LapRLS	LapSVM	lowLapSVM	TabNet	AdaBoostSDM
climate	81.2±5.0 ●	86.2±3.5 ○	86.3±4.1 ○	86.3±4.1 ○	78.4±4.6 ●	82.8±5.1
metal	71.6±7.5	70.3±4.7	66.7±6.1 ●	67.2±4.3 ●	66.6±7.2 ●	71.2±5.8
breast-c	71.7±4.5	72.9±3.8	72.1±5.5	72.0±5.4	65.6±7.7 ●	71.9±4.3
liver	38.6±14.5 ●	47.0±17.7	39.1±11.2 ●	43.2±14.6	40.3±8.9 ●	44.4±8.3
ilpd	71.4±3.5 ○	70.3±3.7	65.3±3.8 ●	65.8±3.5 ●	70.1±3.1	70.9±3.3
heart-l	49.6±8.3 ●	48.9±8.8 ●	52.8±6.9	55.3±8.4	53.7±10.5	55.8±9.8
marketing	48.7±3.9 ●	49.3±5.7	52.7±5.3 ○	52.0±5.6	50.6±5.4	50.3±3.5
heart-h	81.5±5.0	81.2±4.9	80.5±6.6	80.3±7.9	76.3±6.9 ●	81.1±5.4
chatfield	94.8±2.0	95.5±1.9 ○	93.9±2.3 ●	94.3±2.2	95.1±1.8	94.8±2.0
seismic	98.8±1.5	99.8±0.3 ○	99.1±1.3	98.9±1.4	99.5±0.5 ○	98.6±1.5
thoracic-surgery	58.2±4.4	65.8±6.4 ○	62.9±8.3 ○	63.7±7.1 ○	57.5±6.2	57.4±4.9
profb	63.6±3.2 ○	61.9±4.4 ●	60.4±4.0 ●	60.9±4.0 ●	67.4±5.2 ○	63.3±3.3
australian	93.0±0.8	92.9±1.1	92.8±1.2	92.7±1.2	91.4±1.9 ●	93.0±0.8
glass	85.7±5.6	84.7±4.1	83.7±5.7	85.3±4.3	81.5±7.3 ●	85.2±5.4
dmft	57.0±3.8	55.8±4.9	56.8±5.6	56.5±5.6	54.5±5.1 ●	57.0±4.2
credit	75.1±2.1	75.4±2.2	74.2±2.0 ●	74.1±2.0 ●	72.9±3.4 ●	75.0±2.0
kc2	81.8±3.6	82.2±4.6	81.1±5.1 ●	79.3±4.5 ●	82.7±4.8	82.6±4.1
cmc	76.7±2.1	77.2±1.8	76.8±2.0	76.9±2.0	77.1±2.6	76.8±2.0
primary-tumor	89.5±2.4	87.3±2.4 ●	87.3±2.8 ●	86.7±3.4 ●	84.0±3.7 ●	89.4±2.5
diabetes	81.3±2.0	82.3±1.8 ○	81.7±2.0	81.9±2.0	81.8±1.6	81.3±1.9
sa-heart	74.6±4.6	73.9±4.0	74.0±4.1	73.7±4.5	72.2±4.6 ●	74.1±4.6
ecoli	99.2±1.2	99.3±1.0	99.3±1.0	99.6±0.5	99.3±1.4	99.3±1.2
spect	82.7±3.9 ○	83.4±4.1 ○	84.8±3.5 ○	84.8±3.5 ○	76.2±6.0 ●	82.2±4.2
apnea	92.8±4.2 ○	89.4±4.3 ●	89.2±4.7 ●	89.6±4.7 ●	94.5±3.3 ○	92.4±4.4
sensory	64.3±2.7 ○	66.8±3.3 ○	66.6±3.4 ○	66.7±3.2 ○	70.4±4.6 ○	63.8±3.2
backache	64.0±9.5 ○	72.1±5.2 ○	72.7±6.8 ○	72.6±7.6 ○	63.1±13.7	59.8±11.0
win-loss	4-6	4-8	7-5	9-6	12-4	-