data/EDGAR.csv

June 10, 2011

1 Tables of Friedman, Aligned Friedman, Bonferroni-Dunn, Holm, Hochberg and Hommel Tests

Table 1: Average Rankings of the algorithms (Friedman)

Algorithm	Ranking
CADD$_G M_t st$	6.35714285714286
CAIM$_G M_t st$	2.333333333333334
Chi2Merge$_G M_t st$	3.4285714285714293
ChiMerge$_G M_t st$	2.4523809523809517
Fayyad$_G M_t st$	3.4285714285714284
ID3$_G M_t st$	5.142857142857143
USD$_G M_t st$	4.857142857142854

Friedman statistic (distributed according to chi-square with 6 degrees of freedom: 120.80612244898. P-value computed by Friedman Test: 7.245626321150667E-11.

Iman and Davenport statistic (distributed according to F-distribution with 6 and 246 degrees of freedom: 37.75367504083403. P-value computed by Iman and Daveport Test: 2.4512468241256828E-32.

Table 2: Average Rankings of the algorithms (Aligned Friedman)

Algorithm	Ranking
CADD$_G M_t st$	247.33333333333331
CAIM$_G M_t st$	77.14285714285715
Chi2Merge$_G M_t st$	127.88095238095238
ChiMerge$_G M_t st$	86.64285714285714
Fayyad$_G M_t st$	127.61904761904766
ID3$_G M_t st$	187.7142857142857
USD$_G M_t st$	178.16666666666669

Aligned Friedman statistic (distributed according to chi-square with 6 degrees of freedom: 36.30653723767176. P-value computed by Aligned Friedman Test: 2.403134353401448E-6.

Table 3: Average Rankings of the algorithms (Quade)

Algorithm	Ranking
CADD$_G M_t st$	6.252491694352162
CAIM$_G M_t st$	2.0919158361018826
Chi2Merge$_G M_t st$	3.4197120708748607
ChiMerge$_G M_t st$	2.338870431893688
Fayyad$_G M_t st$	3.7076411960132907
ID3$_G M_t st$	5.259136212624584
USD$_G M_t st$	4.9302325581395365

Quade statistic (distributed according to F-distribution with 6 and 246 degrees of freedom: 26.082345220630497. P-value computed by Quade Test: 6.017118008475021 4E-24.

Table 4: Contrast Estimation

	CADD$_{GMtst}$	CAIM$_{GMtst}$	Chi2Merge$_{GMtst}$	ChiMerge$_{GMtst}$	Fayyad$_{GMtst}$	ID3$_{GMtst}$	USD$_{GMtst}$
CADD$_{GMtst}$	0,00000000	-0,16723500	-0,14184286	-0,16037214	-0,14064071	-0,10923500	-0,11462429
CAIM$_{GMtst}$	0,16723500	0,00000000	0,02539214	0,00686286	0,02659429	0,05800000	0,05261071
Chi2Merge$_{GMtst}$	0,14184286	-0,02539214	0,00000000	-0,01852929	0,00120214	0,03260786	0,02721857
ChiMerge$_{GMtst}$	0,16037214	-0,00686286	0,01852929	0,00000000	0,01973143	0,05113714	0,04574786
Fayyad$_{GMtst}$	0,14064071	-0,02659429	-0,00120214	-0,01973143	0,00000000	0,03140571	0,02601643
ID3$_{GMtst}$	0,10923500	-0,05800000	-0,03260786	-0,05113714	-0,03140571	0,00000000	-0,00538929
USD$_{GMtst}$	0,11462429	-0,05261071	-0,02721857	-0,04574786	-0,02601643	0,00538929	0,00000000

Table 5: Holm / Hochberg / Holland / Rom / Finner / Li Table for $\alpha = 0.05$ (FRIEDMAN)

i	algorithm	$z = (R_0 - R_i)/SE$	p	Holm/Hochberg/Hommel	Holland	Rom	Finner	Li
6	CADD$_G M_t st$	8.535789001466187	1.3920219302292253E-17	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.008512444610847103	0.0104934136468
5	ID3$_G M_t st$	5.959900012858043	2.523923153773808E-9	0.01	0.010206218313011495	0.010515350115740741	0.016952427508441503	0.0104934136468
4	USD$_G M_t st$	5.3538084861267095	8.612201222144543E-8	0.0125	0.012741455098566168	0.013109375000000001	0.025320565519103666	0.0104934136468
3	Chi2Merge$_G M_t st$	2.3233508524700848	0.020160312058240717	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.0336174702184 5407	0.0104934136468
2	Fayyad$_G M_t st$	2.323350852470083	0.020160312058240815	0.025	0.025320565519103666	0.025	0.04184374797610979	0.0104934136468
1	ChiMerge$_G M_t st$	0.25253813613804993	0.8006251407096034	0.05	0.050000000000000044	0.05	0.050000000000000044	0.05

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value $\leq 0.008333333333333333$.
Holm's procedure rejects those hypotheses that have a p-value $\leq 0.016666666666666666$.
Hochberg's procedure rejects those hypotheses that have a p-value ≤ 0.025.
Hommel's procedure rejects those hypotheses that have a p-value ≤ 0.05.
Holland's procedure rejects those hypotheses that have a p-value $\leq 0.016952427508441503$.
Rom's procedure rejects those hypotheses that have a p-value ≤ 0.025.
Finner's procedure rejects those hypotheses that have a p-value $\leq 0.050000000000000044$.
Li's procedure rejects those hypotheses that have a p-value $\leq 0.010493413646862978$.

Table 6: Holm / Hochberg / Holland / Rom / Finner / Li Table for $\alpha = 0.05$ (ALIGNED FRIEDMAN)

i	algorithm	$z = (R_0 - R_i)/SE$	p	Holm/Hochberg/Hommel	Holland	Rom	Finner	Li
6	CADD$_G M_t st$	9.173833435959285	4.5649014879818666E-20	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.008512444610847103	0.020600322333375
5	ID3$_G M_t st$	5.960168225600856	2.519783978991536E-9	0.01	0.010206218313011495	0.010515350115740741	0.016952427508441503	0.020600322333375
4	USD$_G M_t st$	5.445519763398889	5.1654327369681126E-8	0.0125	0.012741455098566168	0.013109375000000001	0.025320565519103666	0.020600322333375
3	Chi2Merge$_G M_t st$	2.7349523016269215	0.006238931592129489	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.03361747021845407	0.020600322333375
2	Fayyad$_G M_t st$	2.7208347627635283	0.0065117301858326785	0.025	0.025320565519103666	0.025	0.04184374797610979	0.020600322333375
1	ChiMerge$_G M_t st$	0.512081636954078	0.6085938756586355	0.05	0.050000000000000044	0.05	0.050000000000000044	0.05

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value $\leq 0.008333333333333333$.
Holm's procedure rejects those hypotheses that have a p-value ≤ 0.05.
Hochberg's procedure rejects those hypotheses that have a p-value ≤ 0.025.
Hommel's procedure rejects those hypotheses that have a p-value ≤ 0.05.
Holland's procedure rejects those hypotheses that have a p-value $\leq 0.050000000000000044$.
Rom's procedure rejects those hypotheses that have a p-value ≤ 0.025.
Finner's procedure rejects those hypotheses that have a p-value $\leq 0.050000000000000044$.
Li's procedure rejects those hypotheses that have a p-value $\leq 0.020600322333756027$.

Table 7: Holm / Hochberg / Holland / Rom / Finner / Li Table for $\alpha = 0.05$ (QUADE)

i	algorithm	$z = (R_0 - R_i)/SE$	p	Holm/Hochberg/Hommel	Holland	Rom	Finner	Li
6	CADD$_G M_t st$	4.438839772813819	9.044511504429135E-6	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.008512444610847103	0.010937503967657
5	ID3$_G M_t st$	3.3790475779205518	7.273741885711932E-4	0.01	0.010206218313011495	0.010515350115740741	0.016952427508441503	0.010937503967657
4	USD$_G M_t st$	3.028146483290343	0.002460587831354879	0.0125	0.012741455098566168	0.013109375000000001	0.025320565519103666	0.010937503967657
3	Fayyad$_G M_t st$	1.7237868588063254	0.08474632780286272	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.03361747021845407	0.010937503967657
2	Chi2Merge$_G M_t st$	1.416600715359	0.1565996992699232	0.025	0.025320565519103666	0.025	0.04184374797610979	0.010937503967657
1	ChiMerge$_G M_t st$	0.26347119226443494	0.7921874246145135	0.05	0.050000000000000044	0.05	0.050000000000000044	0.05

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value $\leq 0.008333333333333333$.
Holm's procedure rejects those hypotheses that have a p-value $\leq 0.016666666666666666$.
Hochberg's procedure rejects those hypotheses that have a p-value ≤ 0.0125.
Hommel's procedure rejects those hypotheses that have a p-value $\leq 0.016666666666666666$.
Holland's procedure rejects those hypotheses that have a p-value $\leq 0.016952427508441503$.
Rom's procedure rejects those hypotheses that have a p-value $\leq 0.013109375000000001$.
Finner's procedure rejects those hypotheses that have a p-value ≤ 0.03361747021845407.
Li's procedure rejects those hypotheses that have a p-value $\leq 0.010937503967657185$.

Table 8: Adjusted p-values (FRIEDMAN)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Homm}
1	CADD$_G M_t st$	1.3920219302292253E-17	8.352131581375352E-17	8.352131581375352E-17	8.352131581375352E-17	8.352131581375352E-17
2	ID3$_G M_t st$	2.523923153773808E-9	1.514353892264285E-8	1.261961576886904E-8	1.261961576886904E-8	1.261961576886904E-8
3	USD$_G M_t st$	8.612201222144543E-8	5.167320733286726E-7	3.4448804888578174E-7	3.4448804888578174E-7	3.4448804888578174E-7
4	Chi2Merge$_G M_t st$	0.020160312058240717	0.1209618723494443	0.06048093617472215	0.04032062411648163	0.040320624116481435
5	Fayyad$_G M_t st$	0.020160312058240815	0.12096187234944489	0.06048093617472215	0.04032062411648163	0.04032062411648163
6	ChiMerge$_G M_t st$	0.8006251407096034	4.803750844257621	0.8006251407096034	0.8006251407096034	0.8006251407096034

Table 9: Adjusted p-values (FRIEDMAN)

i	algorithm	unadjusted p	p_{Holl}	p_{Rom}	p_{Finn}	p_{Li}
1	CADD$_G M_t st$	1.3920219302292253E-17	0.0	7.941556965077199E-17	0.0	6.981933104222012E-17
2	ID3$_G M_t st$	2.523923153773808E-9	1.2619615796793937E-8	1.200113703297274E-8	7.571769544689744E-9	1.2659184466918252E-8
3	USD$_G M_t st$	8.612201222144543E-8	3.444880042335896E-7	3.284748976264903E-7	1.7224401693827218E-7	4.3196005417481785E-7
4	Chi2Merge$_G M_t st$	0.020160312058240717	0.059269815548452565	0.04032062411648163	0.030087537737787717	0.09183180961115667
5	Fayyad$_G M_t st$	0.020160312058240815	0.059269815548452565	0.04032062411648163	0.030087537737787717	0.09183180961115711
6	ChiMerge$_G M_t st$	0.8006251407096034	0.8006251407096034	0.8006251407096034	0.8006251407096034	0.8006251407096034

Table 10: Adjusted p-values (ALIGNED FRIEDMAN)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Homm}
1	CADD$_G M_t st$	4.5649014879818666E-20	2.73894089278912E-19	2.73894089278912E-19	2.73894089278912E-19	2.73894089278912E-19
2	ID3$_G M_t st$	2.519783978991536E-9	1.5118703873949215E-8	1.2598919894957679E-8	1.2598919894957679E-8	1.2598919894957679E-8
3	USD$_G M_t st$	5.1654327369681126E-8	3.099259642180868E-7	2.066173094787245E-7	2.066173094787245E-7	2.066173094787245E-7
4	Chi2Merge$_G M_t st$	0.006238931592129489	0.03743358955277694	0.01871679477638847	0.013023460371665357	0.012477863184258978
5	Fayyad$_G M_t st$	0.0065117301858326785	0.03907038111499607	0.01871679477638847	0.013023460371665357	0.013023460371665357
6	ChiMerge$_G M_t st$	0.6085938756586355	3.6515632539518132	0.6085938756586355	0.6085938756586355	0.6085938756586355

Table 11: Adjusted p-values (ALIGNED FRIEDMAN)

i	algorithm	unadjusted p	p_{Holl}	p_{Rom}	p_{Finn}	p_{Li}
1	CADD$_G M_t st$	4.5649014879818666E-20	0.0	2.604299861914097E-19	0.0	1.1662825909184274E-19
2	ID3$_G M_t st$	2.519783978991536E-9	1.2598919574280387E-8	1.1981455449683963E-8	7.559351811181614E-9	6.4377734686954226E-9
3	USD$_G M_t st$	5.1654327369681126E-8	2.0661729349669145E-7	1.9701292918114374E-7	1.0330865207741624E-7	1.31971160746962E-7
4	Chi2Merge$_G M_t st$	0.006238931592129489	0.018600264819996326	0.013023460371665357	0.009343785574428609	0.01568969989450328
5	Fayyad$_G M_t st$	0.0065117301858326785	0.018600264819996326	0.013023460371665357	0.009343785574428609	0.016364508683758022
6	ChiMerge$_G M_t st$	0.6085938756586355	0.6085938756586355	0.6085938756586355	0.6085938756586355	0.6085938756586355

Table 12: Adjusted p-values (QUADE)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Homm}
1	CADD$_G M_t st$	9.044511504429135E-6	5.426706902657481E-5	5.426706902657481E-5	5.426706902657481E-5	5.426706902657481E-5
2	ID3$_G M_t st$	7.273741885711932E-4	0.004364245131427159	0.003636870942855966	0.003636870942855966	0.003636870942855966
3	USD$_G M_t st$	0.002460587831354879	0.014763526988129272	0.009842351325419515	0.009842351325419515	0.009842351325419515
4	Fayyad$_G M_t st$	0.08474632780286272	0.5084779668171763	0.25423898340858814	0.25423898340858814	0.2348995489048848
5	Chi2Merge$_G M_t st$	0.1565996992699232	0.9395981956195392	0.3131993985398464	0.3131993985398464	0.3131993985398464
6	ChiMerge$_G M_t st$	0.7921874246145135	4.753124547687081	0.7921874246145135	0.7921874246145135	0.7921874246145135

Table 13: Adjusted p-values (QUADE)

i	algorithm	unadjusted p	p_{Holl}	p_{Rom}	p_{Finn}	p_{Li}
1	CADD$_G M_t st$	9.044511504429135E-6	5.426584199341722E-5	5.159940499061833E-5	5.426584199341722E-5	4.35205514657818E-5
2	ID3$_G M_t st$	7.273741885711932E-4	0.003631584057696368 7	0.003458630385888745	0.002180535730917 0326	0.003487936915957126
3	USD$_G M_t st$	0.002460587831354879	0.009806083924349673	0.009384840357968547	0.004915121170233849	0.01170186339384371
4	Fayyad$_G M_t st$	0.08474632780286272	0.23330180622832453	0.25423898340858814	0.12438696116853343	0.28967270139204454
5	Chi2Merge$_G M_t st$	0.1565996992699232	0.2886759327284161	0.3131993985398464	0.18484442739116214	0.4297322295688441
6	ChiMerge$_G M_t st$	0.7921874246145135	0.7921874246145135	0.7921874246145135	0.7921874246145135	0.7921874246145135