

data/Oblique-DT.csv

May 11, 2011

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

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Table 1: Average Rankings of the algorithms (Friedman)

Algorithm	Ranking
<i>continuos_GM_{tst}</i>	3.238095238095238
<i>CADD_GM_{tst}</i>	6.309523809523812
<i>CAIM_GM_{tst}</i>	4.714285714285715
<i>Chi2Merge_GM_{tst}</i>	4.07142857142857
<i>ChiMerge_GM_{tst}</i>	4.154761904761903
<i>Fayyad_GM_{tst}</i>	4.88095238095238
<i>ID3_GM_{tst}</i>	3.226190476190476
<i>USD_GM_{tst}</i>	5.404761904761906

Friedman statistic (distributed according to chi-square with 7 degrees of freedom: 54.613095238095354. P-value computed by Friedman

Test: 1.8053181172206223E-9.

Iman and Davenport statistic (distributed according to F-distribution with 7 and 287 degrees of freedom: 9.353631548847527. P-value computed by Iman and Davenport Test: 1.9155283970048249E-10.

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

Algorithm	Ranking
<i>continuos_GM_{tst}</i>	105.19047619047618
<i>CADD_GM_{tst}</i>	252.47619047619048
<i>CAIM_GM_{tst}</i>	172.0
<i>Chi2Merge_GM_{tst}</i>	157.8571428571428
<i>ChiMerge_GM_{tst}</i>	167.10714285714292
<i>Fayyad_GM_{tst}</i>	186.50000000000003
<i>ID3_GM_{tst}</i>	112.17857142857142
<i>USD_GM_{tst}</i>	194.69047619047618

Aligned Friedman statistic (distributed according to chi-square with 7 degrees of freedom: 37.48368088804781. P-value computed by Aligned Friedman Test: 3.7978561459039994E-6.

Table 3: Average Rankings of the algorithms (Quade)

Algorithm	Ranking
$\text{continuous}_G M_{tst}$	2.9291251384274637
$\text{CADD}_G M_{tst}$	6.419712070874863
$\text{CAIM}_G M_{tst}$	4.732004429678848
$\text{Chi2Merge}_G M_{tst}$	4.295681063122922
$\text{ChiMerge}_G M_{tst}$	4.168327796234774
$\text{Fayyad}_G M_{tst}$	5.091362126245849
$\text{ID3}_G M_{tst}$	3.0365448504983403
$\text{USD}_G M_{tst}$	5.327242524916945

Quade statistic (distributed according to F-distribution with 7 and 287 degrees of freedom: 10.793319465965597. P-value computed by Quade Test: 4.423904742785992E-12.

Table 4: Contrast Estimation

continuous $M_{f, st}$	continuous $M_{f, st}$	CADD $M_{f, st}$	CAIM $M_{f, st}$	Chi2Merge $M_{f, st}$	ChiMerge $M_{f, st}$	Fayyad $M_{f, st}$	ID3 $M_{f, st}$	USD $M_{f, st}$
0.00000000	0.00000000	0.14459125	0.03104813	0.01512438	0.02355000	0.04648125	0.00645813	0.06821688
-0.14459125	-0.14459125	0.00000000	-0.11354312	-0.12946688	-0.12104125	-0.09811000	-0.13813312	-0.07637438
-0.03104813	-0.03104813	0.11354312	0.00000000	-0.01592375	-0.00749812	0.01543312	-0.02459000	0.03716875
-0.01512438	-0.01512438	0.12946688	0.00000000	0.00000000	0.00842563	0.03135687	-0.00866625	0.05309250
-0.02355000	-0.02355000	0.12104125	0.00749812	-0.00842563	0.00000000	0.02393125	-0.01709187	0.04466687
-0.04648125	-0.04648125	0.09811000	-0.01543312	-0.03135687	-0.02293125	0.00000000	-0.04002312	0.02173562
-0.00645813	-0.00645813	0.13813312	0.02459000	0.00866625	0.01709187	0.04002312	0.00000000	0.06173875
-0.06821688	-0.06821688	0.07637438	-0.03716875	-0.05309250	-0.04466687	-0.02173562	-0.06173875	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
7	CADD $_G M_t st$	5.768388471276498	8.003315066160877E-9	0.0071428571428571435	0.007300831979014655	0.0075128293213784685	0.007300831979014655	9.352017134523
6	USD $_G M_t st$	4.075733939164475	4.5869441463507796E-5	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.01454836181044361	9.352017134523
5	Fayyad $_G M_t st$	3.0957760521522473	0.0019629855671761394	0.01	0.010206218313011495	0.010515350115740741	0.021742978644310407	9.352017134523
4	CAIM $_G M_t st$	2.7839712699210897	0.0053697790375340495	0.0125	0.012741455098566168	0.013109375000000001	0.028885068789519686	9.352017134523
3	ChiMerge $_G M_t st$	1.7371980724307563	0.08235221505280707	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.035975015734599824	9.352017134523
2	Chi2Merge $_G M_t st$	1.5812956813151762	0.11381044661350825	0.025	0.025320365519103666	0.025	0.0430132001682938	9.352017134523
1	continuous $_G M_t st$	0.022271770159369448	0.9822311674444048	0.05	0.050000000000000044	0.05	0.050000000000000044	0.05

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value $\leq 0.0071428571428571435$.

Holm's procedure rejects those hypotheses that have a p-value $\leq 0.01666666666666666666$.

Hochberg's procedure rejects those hypotheses that have a p-value ≤ 0.01 .

Hommel's procedure rejects those hypotheses that have a p-value ≤ 0.0125 .

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 $\leq 0.035975015734599824$.

Li's procedure rejects those hypotheses that have a p-value $\leq 9.352017134523817E - 4$.

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
7	CADD $_G M_t st$	6.948263926048228	3.698086878204969E-12	0.0071428571428571435	0.007300831979014655	0.0075128293213784685	0.007300831979014655	0.01359725510041
6	USD $_G M_t st$	4.222199175236872	2.4193017508827372E-5	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.01454836181044361	0.01359725510041
5	Fayyad $_G M_t st$	3.8358101046645183	1.25151082029681E-4	0.01	0.010206218313011495	0.010515350115740741	0.021742978644310407	0.01359725510041
4	CAIM $_G M_t st$	3.1517666628663643	0.0016228590263548239	0.0125	0.012741455098566168	0.013109375000000001	0.028885068789519686	0.01359725510041
3	ChiMerge $_G M_t st$	2.9209441221610795	0.0034897241135922207	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.035975015734599824	0.01359725510041
2	Chi2Merge $_G M_t st$	2.4845715817036322	0.012970742802399063	0.025	0.025320565519103666	0.025	0.0430132001682938	0.01359725510041
1	ID3 $_G M_t st$	0.3296662564330998	0.7416521530920558	0.05	0.0500000000000000044	0.05	0.0500000000000000044	0.05

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value $\leq 0.0071428571428571435$.

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 $\leq 0.0500000000000000044$.

Rom's procedure rejects those hypotheses that have a p-value ≤ 0.025 .

Finner's procedure rejects those hypotheses that have a p-value $\leq 0.0500000000000000044$.

Li's procedure rejects those hypotheses that have a p-value $\leq 0.013597255100418119$.

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
7	CADD $_G M_t st$	3.04066694517682	0.00236054786810615	0.0071428571428571435	0.007300831979014655	0.0075128293213784685	0.007300831979014635	0.003923805070014
6	USD $_G M_t st$	2.0890115069100266	0.03670668736015982	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.01454836181044361	0.003923805070014
5	Fayyad $_G M_t st$	1.8835349652467457	0.0596279059631635	0.01	0.010206218313011495	0.010515350115740741	0.021742978644310407	0.003923805070014
4	CAIM $_G M_t st$	1.5704967597550317	0.11629958763597666	0.0125	0.012741455098566168	0.013109375000000001	0.028885068789519686	0.003923805070014
3	Chi2Merge $_G M_t st$	1.1904133916079285	0.23388395215910474	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.035975015734599824	0.003923805070014
2	ChiMerge $_G M_t st$	1.0794753526817458	0.28037587549072074	0.025	0.025320365519103666	0.025	0.0430132001682938	0.003923805070014
1	ID3 $_G M_t st$	0.09357382413773993	0.9254447703669728	0.05	0.0500000000000000044	0.05	0.0500000000000000044	0.05

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value $\leq 0.0071428571428571435$.

Holm's procedure rejects those hypotheses that have a p-value $\leq 0.008333333333333333$.

Hochberg's procedure rejects those hypotheses that have a p-value $\leq 0.0071428571428571435$.

Hommel's procedure rejects those hypotheses that have a p-value $\leq 0.008333333333333333$.

Holland's procedure rejects those hypotheses that have a p-value $\leq 0.008512444610847103$.

Rom's procedure rejects those hypotheses that have a p-value $\leq 0.0075128293213784685$.

Finner's procedure rejects those hypotheses that have a p-value ≤ 0.01454836181044361 .

Li's procedure rejects those hypotheses that have a p-value $\leq 0.003923805070014319$.

Table 8: Adjusted p -values (FRIEDMAN)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Hommel}
1	CADD $_G M_t st$	8.003315066160877E-9	5.602320546312614E-8	5.602320546312614E-8	5.602320546312614E-8	5.602320546312614E-8
2	USD $_G M_t st$	4.5869441463507796E-5	3.2108609024455455E-4	2.752166487810468E-4	2.752166487810468E-4	2.752166487810468E-4
3	Fayyad $_G M_t st$	0.0019629853671761394	0.013740898970232975	0.009814927835880697	0.009814927835880697	0.009814927835880697
4	CAlM $_G M_t st$	0.0053697790375340495	0.037588453262738346	0.021479116150136198	0.021479116150136198	0.021479116150136198
5	ChiMerge $_G M_t st$	0.08235221505280707	0.5764655053696495	0.2470566451584212	0.2276208932270165	0.17071566992026238
6	Chi2Merge $_G M_t st$	0.11381044661350825	0.7966731262945578	0.2470566451584212	0.2276208932270165	0.2276208932270165
7	continuous $_G M_t st$	0.9822311674444048	6.875618172110833	0.9822311674444048	0.9822311674444048	0.9822311674444048

Table 9: Adjusted p -values (FRIEDMAN)

i	algorithm	unadjusted p	p_{Holl}	p_{Rom}	p_{Finn}	p_{Li}
1	CADD $_G M_t st$	8.003315066160877E-9	5.602320374276104E-8	5.326432109529419E-8	5.602320374276104E-8	4.5041290339833293E-7
2	USD $_G M_t st$	4.5869441463507796E-5	2.751850906259623E-4	2.6168753122929306E-4	1.605338403084522E-4	0.0025748082382226092
3	Fayyad $_G M_t st$	0.0019629853671761394	0.009776470278265226	0.009333904936924962	0.004574306923116667	0.09948325871252432
4	CAlM $_G M_t st$	0.0053697790375340495	0.021306727497387046	0.020480682860678136	0.009378182175613925	0.23207006245476486
5	ChiMerge $_G M_t st$	0.08235221505280707	0.22726948662948843	0.2276208932270165	0.11336181974042947	0.8225265018690827
6	Chi2Merge $_G M_t st$	0.11381044661350825	0.22726948662948843	0.2276208932270165	0.13147751987370182	0.8649572131128707
7	continuous $_G M_t st$	0.9822311674444048	0.9822311674444048	0.9822311674444048	0.9822311674444048	0.9822311674444049

Table 10: Adjusted p -values (ALIGNED FRIEDMAN)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Hommel}
1	CADD $_G M_{i,st}$	3.698086878204969E-12	2.5886608147434786E-11	2.5886608147434786E-11	2.5886608147434786E-11	2.5886608147434786E-11
2	USD $_G M_{i,st}$	2.4193017508827372E-5	1.693511225617916E-4	1.4515810505296423E-4	1.4515810505296423E-4	1.4515810505296423E-4
3	Fayyad $_G M_{i,st}$	1.25151082029681E-4	8.76057574207767E-4	6.25755410148405E-4	6.25755410148405E-4	6.25755410148405E-4
4	CALM $_G M_{i,st}$	0.0016228590263548239	0.011360013184483767	0.006491436105419295	0.006491436105419295	0.006491436105419295
5	ChiMerge $_G M_{i,st}$	0.0034897241135922207	0.024428068795145544	0.010469172340776663	0.010469172340776663	0.010469172340776663
6	Chi2Merge $_G M_{i,st}$	0.012970742802399063	0.09079519961679344	0.025941485604798125	0.025941485604798125	0.025941485604798125
7	ID3 $_G M_{i,st}$	0.7416521530920558	5.191565071644391	0.7416521530920558	0.7416521530920558	0.7416521530920558

Table 11: Adjusted p -values (ALIGNED FRIEDMAN)

i	algorithm	unadjusted p	p_{Holl}	p_{Rom}	p_{Finn}	p_{Lsi}
1	CADD $_G M_{i,st}$	3.698086878204969E-12	2.5886293109067537E-11	2.4611812141676857E-11	2.5886293109067537E-11	1.4314370808245029E-11
2	USD $_G M_{i,st}$	2.4193017508827372E-5	1.4514932580445006E-4	1.38022413678371E-4	8.467300061498761E-5	9.363636063642054E-5
3	Fayyad $_G M_{i,st}$	1.25151082029681E-4	6.255988018161185E-4	5.950875655692082E-4	2.9199482739628024E-4	4.84194028014236E-4
4	CALM $_G M_{i,st}$	0.0016228590263548239	0.006475651166276353	0.006189688777515418	0.002838274715394773	0.006242468821717785
5	ChiMerge $_G M_{i,st}$	0.0034897241135922207	0.01043268031607869	0.010469172340776663	0.004882201486957838	0.013327820373437493
6	Chi2Merge $_G M_{i,st}$	0.012970742802399063	0.025773245435952163	0.025941485604798125	0.015116117300566057	0.047806631808622654
7	ID3 $_G M_{i,st}$	0.7416521530920558	0.7416521530920558	0.7416521530920558	0.7416521530920558	0.7416521530920558

Table 12: Adjusted p -values (QUADE)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Hommel}
1	CADD $_G M_t st$	0.00236054786810615	0.01652383507674305	0.01652383507674305	0.01652383507674305	0.01652383507674305
2	USD $_G M_t st$	0.03670668736015982	0.25694681152111876	0.22024012416095892	0.22024012416095892	0.1835334368007991
3	Fayyad $_G M_t st$	0.0596279059631635	0.41739534174214454	0.2981395298158175	0.2981395298158175	0.29074896908994163
4	CAIM $_G M_t st$	0.11629958763597666	0.8140971134518366	0.4651983505439066	0.4651983505439066	0.3738345006542943
5	Chi2Merge $_G M_t st$	0.23388395215910474	1.6371876651137331	0.7016518564773142	0.5607517509814415	0.46776790431820947
6	ChiMerge $_G M_t st$	0.28037587549072074	1.9626311284350453	0.7016518564773142	0.5607517509814415	0.5607517509814415
7	ID3 $_G M_t st$	0.925447703669728	6.478133925688096	0.925447703669728	0.925447703669728	0.925447703669728

Table 13: Adjusted p -values (QUADE)

i	algorithm	unadjusted p	p_{Hol}	p_{Finn}	p_{Li}
1	CADD $_G M_t st$	0.00236054786810615	0.016407278449998786	0.016407278449998786	0.030691204995848088
2	USD $_G M_t st$	0.03670668736015982	0.2099173434979056	0.12268630522212653	0.3299211096723019
3	Fayyad $_G M_t st$	0.0596279059631635	0.2646422670067453	0.13363803741190128	0.4443867645449262
4	CAIM $_G M_t st$	0.11629958763597666	0.3901539284009262	0.19455878149577321	0.6093709174835481
5	Chi2Merge $_G M_t st$	0.23388395215910474	0.5503405977502411	0.3113280671829124	0.7582894465374753
6	ChiMerge $_G M_t st$	0.28037587549072074	0.5503405977502411	0.3187759063130199	0.7899510316474054
7	ID3 $_G M_t st$	0.925447703669728	0.925447703669728	0.925447703669728	0.925447703669728