

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
continuous $_G M_{tst}$	4.928571428571428
CADD $_G M_{tst}$	7.333333333333338
CAIM $_G M_{tst}$	2.69047619047619
Chi2Merge $_G M_{tst}$	4.523809523809524
ChiMerge $_G M_{tst}$	2.714285714285713
Fayyad $_G M_{tst}$	4.238095238095237
ID3 $_G M_{tst}$	5.0714285714285685
USD $_G M_{tst}$	4.499999999999999

Friedman statistic (distributed according to chi-square with 7 degrees of freedom: 105.49206349206378. P-value computed by Friedman

Test: 5.271016956243102E-11.

Iman and Davenport statistic (distributed according to F-distribution with 7 and 287 degrees of freedom: 22.944257325698988, P-value computed by Iman and Davenport Test: 3.330669086073912E-16.

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

Algorithm	Ranking
$\text{continuos}_G M_{tst}$	184.26190476190476
$\text{CADD}_G M_{tst}$	289.00000000000006
$\text{CAIM}_G M_{tst}$	99.7857142857143
$\text{Chi2Merge}_G M_{tst}$	167.47619047619045
$\text{ChiMerge}_G M_{tst}$	97.38095238095237
$\text{Fayyad}_G M_{tst}$	161.88095238095235
$\text{ID3}_G M_{tst}$	186.5
$\text{USD}_G M_{tst}$	161.71428571428575

Aligned Friedman statistic (distributed according to chi-square with 7 degrees of freedom: 37.00854872329354. P-value computed by Aligned Friedman Test: 4.6732320188036525E-6.

Table 3: Average Rankings of the algorithms (Quade)

Algorithm	Ranking
$\text{continuous}_G M_{tst}$	5.05094130675526
$\text{CADD}_G M_{tst}$	7.384274640088594
$\text{CAIM}_G M_{tst}$	2.461794019933555
$\text{Chi2Merge}_G M_{tst}$	4.504983388704319
$\text{ChiMerge}_G M_{tst}$	2.7619047619047623
$\text{Fayyad}_G M_{tst}$	4.214839424141749
$\text{ID3}_G M_{tst}$	5.0287929125138415
$\text{USD}_G M_{tst}$	4.5924695459579175

Quade statistic (distributed according to F-distribution with 7 and 287 degrees of freedom: 20.03312276618735. P-value computed by Quade Test: 2.220453908870057E-16.

Table 4: Contrast Estimation

	continuous M_t^{st}	CADD $_G M_t^{st}$	CAIM $_G M_t^{st}$	Chi2Merge M_t^{st}	ChiMerge $_G M_t^{st}$	Fayyad $_G M_t^{st}$	ID3 $_G M_t^{st}$	USD $_G M_t^{st}$
continuous M_t^{st}	0,00000000	0,14006250	-0,03734563	-0,00463063	-0,03357188	-0,01239938	0,00148500	-0,00615500
CADD $_G M_t^{st}$	-0,14006250	0,00000000	-0,17740812	-0,14469312	-0,17363437	-0,15246187	-0,13857750	-0,14621750
CAIM $_G M_t^{st}$	0,03734563	0,00000000	0,00000000	0,03271500	0,00377375	0,02494625	0,03883062	0,03119062
Chi2Merge $_G M_t^{st}$	0,00463063	0,14469312	-0,03271500	0,00000000	-0,02894125	-0,00776875	0,00611563	-0,00152437
ChiMerge $_G M_t^{st}$	0,03357188	0,17363437	-0,00377375	0,02894125	0,00000000	0,02117250	0,03505688	0,02741688
Fayyad $_G M_t^{st}$	0,01239938	0,15246187	-0,02494625	0,00776875	-0,02117250	0,00000000	0,01388438	0,00624438
ID3 $_G M_t^{st}$	-0,00148500	0,13857750	-0,03883062	-0,00611563	-0,03505688	-0,01388438	0,00000000	-0,00764000
USD $_G M_t^{st}$	0,00615500	0,14621750	-0,03119062	0,00152437	-0,02741688	-0,00624438	0,00764000	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 $_G M_t st$	8.685990362153802	3.754567430943737E-18	0.0071428571428571435	0.007300831979014655	0.0075128293213784685	0.007300831979014655	0.001869939671
6	ID $_G M_t st$	4.454354031873735	8.414615335854063E-6	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.01454836181044361	0.001869939671
5	continuous $_G M_t st$	4.187092789961315	2.825503328119922E-5	0.01	0.010206218313011495	0.010515350115740741	0.021742978644310407	0.001869939671
4	Chi2Merge $_G M_t st$	3.4298526045427806	6.039092073238536E-4	0.0125	0.012741455098566168	0.013109375000000001	0.028885068789519686	0.001869939671
3	USD $_G M_t st$	3.3853090642240415	7.10981531953116E-4	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.035975015734599824	0.001869939671
2	Fayyad $_G M_t st$	2.8953301207179303	0.003787599770715278	0.025	0.025320365519103666	0.025	0.0430132001682938	0.001869939671
1	ChiMerge $_G M_t st$	0.044543540318736405	0.9644711462440775	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 $\leq 0.0018699396713643434$.

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 $_G M_{t,st}$	9.03970709292534	1.5709218004647769E-19	0.0071428571428571435	0.007300831979014655	0.0075128293213784685	0.007300831979014655	0.004753828050505
6	ID3 $_G M_{t,st}$	4.204227590559088	2.6197523649180268E-5	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.01454836181044361	0.004753828050505
5	continuous $_G M_{t,st}$	4.098644530577108	4.155767029275894E-5	0.01	0.010206218313011495	0.010515350115740741	0.021742978644310407	0.004753828050505
4	Chi2Merge $_G M_{t,st}$	3.30677158071225	9.437781578815246E-4	0.0125	0.012741455098566168	0.013109375000000001	0.028885068789519686	0.004753828050505
3	Fayyad $_G M_{t,st}$	3.0428139307572977	0.002343772059780003	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.035975015734599824	0.004753828050505
2	USD $_G M_{t,st}$	3.0349513624607702	0.0024057447976199397	0.025	0.025320565519103666	0.025	0.0430132001682938	0.004753828050505
1	CAIM $_G M_{t,st}$	0.113445628278513	0.9096772670391184	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 $\leq 0.004753828050572714$.

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

i	algorithm	$z = (R_0 - R_t)/SE$	p	Holm/Hochberg/Hommel	Holland	Rom	Finner	Li
7	CADD _G $M_t st$	4.287996374146877	1.802920356831588E-5	0.0071428571428571435	0.007300831979014655	0.0075128293213784685	0.007300831979014655	0.01085460297331
6	continuos _G $M_t st$	2.255418565299302	0.024107068512702584	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.01454836181044361	0.01085460297331
5	ID3 _G $M_t st$	2.2361249933121385	0.02534358470175508	0.01	0.010206218313011495	0.010515350115740741	0.021742978644310407	0.01085460297331
4	USD _G $M_t st$	1.856041625165037	0.06344762519318944	0.0125	0.012741455098566168	0.013109375000000001	0.028885068789519686	0.01085460297331
3	Chi2Merge _G $M_t st$	1.779832015815745	0.07510345635186155	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.035975015734599824	0.01085460297331
2	Fayyad _G $M_t st$	1.527086222783915	0.126739572348286	0.025	0.025320565519103666	0.025	0.0430132001682938	0.01085460297331
1	ChiMerge _G $M_t st$	0.26142790042605274	0.7937625435070964	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 $\leq 0.008333333333333333$.

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 $\leq 0.010854602973310716$.

Table 8: Adjusted p -values (FRIEDMAN)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Hommel}
1	CADD $_G M_t st$	3.754567430943737E-18	2.628197201660616E-17	2.628197201660616E-17	2.628197201660616E-17	2.628197201660616E-17
2	ID3 $_G M_t st$	8.414615335854063E-6	5.8902307350978435E-5	5.0487692015124376E-5	5.0487692015124376E-5	5.0487692015124376E-5
3	continuous $_G M_t st$	2.825503328119922E-5	1.9778523296839454E-4	1.412751664059961E-4	1.412751664059961E-4	1.412751664059961E-4
4	Chi2Merge $_G M_t st$	6.039092073238536E-4	0.004227364451266975	0.0024156368292954145	0.002132944595859348	0.001811727621971561
5	USD $_G M_t st$	7.10981531953116E-4	0.004976870723671811	0.0024156368292954145	0.002132944595859348	0.002132944595859348
6	Fayyad $_G M_t st$	0.003787599770715278	0.026513198395006946	0.007575199541430556	0.007575199541430556	0.007575199541430556
7	ChiMerge $_G M_t st$	0.9644711462440775	6.751298023708542	0.9644711462440775	0.9644711462440775	0.9644711462440775

Table 9: Adjusted p -values (FRIEDMAN)

i	algorithm	unadjusted p	p_{Holt}	p_{Rom}	p_{Finn}	p_{Li}
1	CADD $_G M_t st$	3.754567430943737E-18	0.0	2.498770616457211E-17	0.0	1.056765708439965E-16
2	ID3 $_G M_t st$	8.414615335854063E-6	5.048662994078246E-5	4.800581483503862E-5	2.9450843901601687E-5	2.3678284014253578E-4
3	continuous $_G M_t st$	2.825503328119922E-5	1.4126718316243014E-4	1.3435136714517673E-4	6.592716912035002E-5	7.946380975097244E-4
4	Chi2Merge $_G M_t st$	6.039092073238536E-4	0.0024134494721764765	0.002132944595859348	0.0010566017622400947	0.016713618273203765
5	USD $_G M_t st$	7.10981531953116E-4	0.0024134494721764765	0.002132944595859348	0.0010566017622400947	0.019618784862164725
6	Fayyad $_G M_t st$	0.003787599770715278	0.007560853629407505	0.007575199541430556	0.004417470187745409	0.09633625189894329
7	ChiMerge $_G M_t st$	0.9644711462440775	0.9644711462440775	0.9644711462440775	0.9644711462440775	0.9644711462440775

Table 10: Adjusted p -values (ALIGNED FRIEDMAN)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Hommel}
1	CADD $_G M_t st$	1.5709218004647769E-19	1.0996452603253437E-18	1.0996452603253437E-18	1.0996452603253437E-18	1.0996452603253437E-18
2	ID3 $_G M_t st$	2.6197523649180268E-5	1.8338266554426187E-4	1.571851418950816E-4	1.571851418950816E-4	1.3098761824590133E-4
3	continuous $_G M_t st$	4.155767029275894E-5	2.909036920493126E-4	2.077883514637947E-4	2.077883514637947E-4	2.077883514637947E-4
4	Chi2Merge $_G M_t st$	9.437781578815246E-4	0.006606447105170672	0.0037751126315260985	0.0037751126315260985	0.00320765973015992
5	Fayyad $_G M_t st$	0.002343772059780003	0.016406404418460023	0.007031316179340009	0.0048114895952398795	0.004687544119560006
6	USD $_G M_t st$	0.0024057447976199397	0.016840213583339578	0.007031316179340009	0.0048114895952398795	0.0048114895952398795
7	CAIM $_G M_t st$	0.9096772670391184	6.367740869273829	0.9096772670391184	0.9096772670391184	0.9096772670391184

Table 11: Adjusted p -values (ALIGNED FRIEDMAN)

i	algorithm	unadjusted p	p_{Hol}	p_{Rom}	p_{Finn}	p_{Li}
1	CADD $_G M_t st$	1.5709218004647769E-19	0.0	1.0454928052169175E-18	0.0	1.7392319175562783E-18
2	ID3 $_G M_t st$	2.6197523649180268E-5	1.5717484760102707E-4	1.4945822467729556E-4	9.168833020412048E-5	2.8995942186239555E-4
3	continuous $_G M_t st$	4.155767029275894E-5	2.0777108178204884E-4	1.976047865042079E-4	9.696521085567067E-5	4.5989040585045173E-4
4	Chi2Merge $_G M_t st$	9.437781578815246E-4	0.003769771690022572	0.00359963063792715	0.001651027197136612	0.010340903210964274
5	Fayyad $_G M_t st$	0.002343772059780003	0.0070148492519021	0.0048114895952398795	0.0032797420471259997	0.02529254836207988
6	USD $_G M_t st$	0.0024057447976199397	0.0070148492519021	0.0048114895952398795	0.0032797420471259997	0.025943969487834877
7	CAIM $_G M_t st$	0.9096772670391184	0.9096772670391184	0.9096772670391184	0.9096772670391184	0.9096772670391184

Table 12: Adjusted p -values (QUADE)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Hom}
1	CADD $_G M_t st$	1.802920356831588E-5	1.2620442497821116E-4	1.2620442497821116E-4	1.2620442497821116E-4	1.2620442497821116E-4
2	continuos $_G M_t st$	0.024107068512702584	0.1687494795889181	0.1446424110762155	0.1267179235087754	0.12053534256351292
3	ID3 $_G M_t st$	0.02534358470175508	0.17740509291228557	0.1446424110762155	0.1267179235087754	0.1251724272531026
4	USD $_G M_t st$	0.06344762519318944	0.4441333763523261	0.2537905007727578	0.22531036905558466	0.190109358522429
5	Chi2Merge $_G M_t st$	0.07510345635186155	0.5257241044630309	0.2537905007727578	0.22531036905558466	0.190109358522429
6	Fayyad $_G M_t st$	0.126739572348286	0.887177006438002	0.2537905007727578	0.253479144696572	0.253479144696572
7	ChiMerge $_G M_t st$	0.7937625435070964	5.556337804549675	0.7937625435070964	0.7937625435070964	0.7937625435070964

Table 13: Adjusted p -values (QUADE)

i	algorithm	unadjusted p	p_{Holl}	p_{Rom}	p_{Finn}	p_{Li}
1	CADD $_G M_t st$	1.802920356831588E-5	1.2619759908738537E-4	1.1998943937813197E-4	1.2619759908738537E-4	8.741199540674461E-5
2	continuos $_G M_t st$	0.024107068512702584	0.13620032922384928	0.12050756476390412	0.0818627592067186	0.10465657263664448
3	ID3 $_G M_t st$	0.02534358470175508	0.13620032922384928	0.12050756476390412	0.0818627592067186	0.10943721718762017
4	USD $_G M_t st$	0.06344762519318944	0.2306423477821713	0.22531036905558466	0.1083772902007416	0.23526560978645808
5	Chi2Merge $_G M_t st$	0.07510345635186155	0.2306423477821713	0.22531036905558466	0.1083772902007416	0.2669482216164601
6	Fayyad $_G M_t st$	0.126739572348286	0.2374162254975456	0.253479144696572	0.1462427389096268	0.3806255728491508
7	ChiMerge $_G M_t st$	0.7937625435070964	0.7937625435070964	0.7937625435070964	0.7937625435070964	0.7937625435070965