

data/REGALTC.csv

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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
$CADD_G M_{tst}$	5.761904761904762
$CAIM_G M_{tst}$	3.285714285714285
$Chi2Merge_G M_{tst}$	2.547619047619046
$ChiMerge_G M_{tst}$	2.80952380952381
$Fayyad_G M_{tst}$	2.7380952380952372
$ID3_G M_{tst}$	6.0
$USD_G M_{tst}$	4.857142857142858

Friedman statistic (distributed according to chi-square with 6 degrees of freedom: 121.21428571428565. P-value computed by Friedman Test: 8.796796624466197E-11.

Iman and Davenport statistic (distributed according to F-distribution with 6 and 246 degrees of freedom: 37.99945385035497. P-value computed by Iman and Davenport Test: 1.6819638217568333E-32.

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

Algorithm	Ranking
$CADD_G M_{tst}$	217.30952380952377
$CAIM_G M_{tst}$	111.83333333333337
$Chi2Merge_G M_{tst}$	93.47619047619047
$ChiMerge_G M_{tst}$	98.69047619047619
$Fayyad_G M_{tst}$	95.14285714285714
$ID3_G M_{tst}$	230.5952380952381
$USD_G M_{tst}$	185.45238095238096

Aligned Friedman statistic (distributed according to chi-square with 6 degrees of freedom: 36.65871878219471. P-value computed by Aligned Friedman Test: 2.0522645685083774E-6.

Table 3: Average Rankings of the algorithms (Quade)

Algorithm	Ranking
$CADD_G M_{tst}$	5.564784053156146
$CAIM_G M_{tst}$	3.273532668881507
$Chi2Merge_G M_{tst}$	2.7685492801771874
$ChiMerge_G M_{tst}$	2.7275747508305646
$Fayyad_G M_{tst}$	2.678848283499446
$ID3_G M_{tst}$	6.00996677740864
$USD_G M_{tst}$	4.976744186046512

Quade statistic (distributed according to F-distribution with 6 and 246 degrees of freedom: 21.910494983097482. P-value computed by Quade Test: 1.3053796201101196E-20.

Table 4: Contrast Estimation

	CADL $_C$ M_t st	CAIM $_G$ M_t st	Chi2Merge $_G$ M_t st	Fayyad $_C$ M_t st	ID3 $_G$ M_t st	USD $_G$ M_t st
CADL $_C$ M_t st	0.00000000	-0.18024786	-0.19932500	-0.20035929	-0.01938500	-0.10853214
CAIM $_G$ M_t st	0.18024786	0.00000000	-0.01907714	-0.00980786	0.16086286	0.07171571
Chi2Merge $_G$ M_t st	0.19932500	0.01907714	0.00000000	0.00926929	0.17994000	0.09079286
Fayyad $_C$ M_t st	0.20035929	0.00980786	-0.00926929	0.00000000	0.17067071	0.08152357
ID3 $_G$ M_t st	0.01938500	-0.16086286	-0.17994000	-0.18097429	0.00000000	-0.08914714
USD $_G$ M_t st	0.10853214	-0.07171571	-0.09079286	-0.08914714	0.08914714	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	ID _{3C} M_t, st	7.323605948003531	2.4139484272456853E-13	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.008512444610847103	0.0165174815865666
5	CADD _G M_t, st	6.818529675727426	9.197697890623162E-12	0.01	0.010206218313011495	0.010515350115740741	0.016952427508441503	0.0165174815865666
4	USD _G M_t, st	4.899239841078226	9.620814627092812E-7	0.0125	0.012741455098566168	0.013109375000000001	0.025320565519103666	0.0165174815865666
3	CAIM _G M_t, st	1.5657364440559287	0.1174103300525849	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.03361747021845407	0.0165174815865666
2	ChiMerge _G M_t, st	0.5555838995037206	0.578495340505612	0.025	0.025320565519103666	0.025	0.04184374797610979	0.0165174815865666
1	Fayyad _G M_t, st	0.4040610178208857	0.6861678498552382	0.05	0.0500000000000000044	0.05	0.0500000000000000044	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 $\leq 0.016517481586566414$.

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	ID _{3C} M_t, st	7.391173301299601	1.455387784637293E-13	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.008512444610847103	0.00376761850521
5	CADD _G M_t, st	6.675029057138254	2.4718318555003525E-11	0.01	0.010206218313011495	0.010515350115740741	0.016952427508441503	0.00376761850521
4	USD _G M_t, st	4.957822966299767	7.128747530105286E-7	0.0125	0.01274145998566168	0.013109375000000001	0.025320565519103666	0.00376761850521
3	CAIM _G M_t, st	0.9895111330616435	0.32241312556968876	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.03361747021845407	0.00376761850521
2	ChiMerge _G M_t, st	0.28106736464396853	0.7786587318132019	0.025	0.025320565519103666	0.025	0.04184374797610979	0.00376761850521
1	Fayyad _G M_t, st	0.08983888367615443	0.9284152484010093	0.05	0.0500000000000000044	0.05	0.0500000000000000044	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 $\leq 0.003767618505210037$.

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	ID _{3G} $M_t.st$	3.5539073826521075	3.7955285318659897E-4	0.008333333333333333	0.008512444610847103	0.008764162596519848	0.008512444610847103	0.002182085855555
5	CADD _G $M_t.st$	3.0789503454758593	0.0020773130149204667	0.01	0.010206218313011495	0.010515350115740741	0.016952427508441503	0.002182085855555
4	USD _G $M_t.st$	2.451581721743058	0.0142229888583587271	0.0125	0.012741455098566168	0.013109375000000001	0.025320565519103666	0.002182085855555
3	CAlM _G $M_t.st$	0.6344575347354335	0.5257822718262867	0.016666666666666666	0.016952427508441503	0.016666666666666666	0.03361747021845407	0.002182085855555
2	Chi2Merge _G $M_t.st$	0.09570029855551265	0.9237586037925799	0.025	0.025320565519103666	0.025	0.04184374797610979	0.002182085855555
1	ChiMerge _G $M_t.st$	0.051985347352623903	0.9585403687452877	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 ≤ 0.0125 .

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 $\leq 0.012741455098566168$.

Rom's procedure rejects those hypotheses that have a p-value $\leq 0.010515350115740741$.

Finner's procedure rejects those hypotheses that have a p-value ≤ 0.03361747021845407 .

Li's procedure rejects those hypotheses that have a p-value $\leq 0.002182085855511174$.

Table 8: Adjusted p -values (FRIEDMAN)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Homn}
1	ID _{3G} $M_t st$	2.4139484272456853E-13	1.4483690563474113E-12	1.4483690563474113E-12	1.4483690563474113E-12	1.4483690563474113E-12
2	CADD _G $M_t st$	9.197697890623162E-12	5.518618734373897E-11	4.598848945311581E-11	4.598848945311581E-11	4.598848945311581E-11
3	USD _G $M_t st$	9.620814627092812E-7	5.772488776255687E-6	3.848325850837125E-6	3.848325850837125E-6	3.848325850837125E-6
4	CAlM _G $M_t st$	0.1174103306525849	0.7044619839155094	0.3522309919577547	0.3522309919577547	0.3522309919577547
5	ChiMerge _G $M_t st$	0.578495340505612	3.4709720430336723	1.156990681011224	0.6861678498552382	0.6861678498552382
6	Fayyad _G $M_t st$	0.6861678498552382	4.117007099131429	1.156990681011224	0.6861678498552382	0.6861678498552382

Table 9: Adjusted p -values (FRIEDMAN)

i	algorithm	unadjusted p	p_{Hol}	p_{Rom}	p_{Finn}	p_{Li}
1	ID _{3G} $M_t st$	2.4139484272456853E-13	1.4481749133210542E-12	1.3771700380160893E-12	1.4481749133210542E-12	7.691845490629008E-13
2	CADD _G $M_t st$	9.197697890623162E-12	4.598821323753555E-11	4.3734625045222476E-11	2.7592927942521328E-11	2.930769803575242E-11
3	USD _G $M_t st$	9.620814627092812E-7	3.848320297317187E-6	3.6694406205836704E-6	1.9241619998444648E-6	3.065583028779546E-6
4	CAlM _G $M_t st$	0.1174103306525849	0.31249395794221113	0.3522309919577547	0.1708401589212193	0.27226058628430766
5	ChiMerge _G $M_t st$	0.578495340505612	0.82233382202452	0.6861678498552382	0.6453803018183186	0.64829933593349625
6	Fayyad _G $M_t st$	0.6861678498552382	0.82233382202452	0.6861678498552382	0.6861678498552382	0.6861678498552382

Table 10: Adjusted p -values (ALIGNED FRIEDMAN)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Homn}
1	ID _{3G} $M_t.st$	1.455387784637293E-13	8.732326707823758E-13	8.732326707823758E-13	8.732326707823758E-13	8.732326707823758E-13
2	CADD _G $M_t.st$	2.4718318555003525E-11	1.4830991133002116E-10	1.2359159277501762E-10	1.2359159277501762E-10	1.2359159277501762E-10
3	USD _G $M_t.st$	7.128747530105286E-7	4.277248518063172E-6	2.8514990120421144E-6	2.8514990120421144E-6	2.8514990120421144E-6
4	CAlM _G $M_t.st$	0.32241312556968876	1.9344787534181327	0.9672393767090663	0.9284152484010093	0.9284152484010093
5	ChiMerge _G $M_t.st$	0.7786587318132019	4.671952390879211	1.5573174636264038	0.9284152484010093	0.9284152484010093
6	Fayyad _G $M_t.st$	0.9284152484010093	5.570491490406056	1.5573174636264038	0.9284152484010093	0.9284152484010093

Table 11: Adjusted p -values (ALIGNED FRIEDMAN)

i	algorithm	unadjusted p	p_{Hol}	p_{Rom}	p_{Finn}	p_{Li}
1	ID _{3G} $M_t.st$	1.455387784637293E-13	8.733014311701481E-13	8.303062435281674E-13	8.733014311701481E-13	2.033097485323755E-12
2	CADD _G $M_t.st$	2.4718318555003525E-11	1.2359169243580936E-10	1.1753445336072042E-10	7.415501546148562E-11	3.4530145029960263E-10
3	USD _G $M_t.st$	7.128747530105286E-7	2.8514959629077907E-6	2.718950190266617E-6	1.4257489978630744E-6	9.95837294974874E-6
4	CAlM _G $M_t.st$	0.32241312556968876	0.6889036225652939	0.9284152484010093	0.4422398567173287	0.8183118342834533
5	ChiMerge _G $M_t.st$	0.7786587318132019	0.9510080429974599	0.9284152484010093	0.8362901265762576	0.915806762420916
6	Fayyad _G $M_t.st$	0.9284152484010093	0.9510080429974599	0.9284152484010093	0.9284152484010093	0.9284152484010093

Table 12: Adjusted p -values (QUADE)

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Hommel}
1	ID3 $_G M_t st$	3.7955285318659897E-4	0.0022773171191195936	0.0022773171191195936	0.0022773171191195936	0.0022773171191195936
2	CADD $_G M_t st$	0.0020773130149204667	0.0124638780895228	0.010386565074602333	0.010386565074602333	0.010386565074602333
3	USD $_G M_t st$	0.014222988583587271	0.08533793150152363	0.056891954334349085	0.056891954334349085	0.056891954334349085
4	CAIM $_G M_t st$	0.5257822718262867	3.15469363095772	1.57734681547886	0.9585403687452877	0.9585403687452877
5	Chi2Merge $_G M_t st$	0.9237586037925799	5.54255162275548	1.8475172075851598	0.9585403687452877	0.9585403687452877
6	ChiMerge $_G M_t st$	0.9585403687452877	5.751242212471726	1.8475172075851598	0.9585403687452877	0.9585403687452877

Table 13: Adjusted p -values (QUADE)

i	algorithm	unadjusted p	p_{Holl}	p_{Rom}	p_{Finn}	p_{Li}
1	ID3 $_G M_t st$	3.7955285318659897E-4	0.002275157306853237	0.002165368619115506	0.002275157306853237	0.009071707808827505
2	CADD $_G M_t st$	0.0020773130149204667	0.010343502328736376	0.0098775266256274	0.006219002320757561	0.047713790159979156
3	USD $_G M_t st$	0.014222988583587271	0.055689661853351224	0.054247393882573616	0.028243683762925742	0.2554295869140204
4	CAIM $_G M_t st$	0.5257822718262867	0.8933567536935039	0.9585403687452877	0.6734372245547633	0.9269101400486766
5	Chi2Merge $_G M_t st$	0.9237586037925799	0.9941872495043432	0.9585403687452877	0.9544352481804026	0.95704636552719
6	ChiMerge $_G M_t st$	0.9585403687452877	0.9941872495043432	0.9585403687452877	0.9585403687452877	0.9585403687452877