Output tables for the test of Multiple comparisons.

December 26, 2016

1 Average rankings of Friedman test

Average ranks obtained by applying the Friedman procedure

Algorithm	Ranking
SVRCC	2.7917
MORF	7.5
ST	5.7708
MTS	5.9375
MTSC	6.1667
RC	7.4375
ERC	6.375
ERCC	4.9792
SVR	4.7708
SVRRC	3.2708

Table 1: Average Rankings of the algorithms

Friedman statistic considering reduction performance (distributed according to chi-square with 9 degrees of freedom: 58.479545.
P-value computed by Friedman Test: 2.6597459790167477E-9.

Iman and Davenport statistic considering reduction performance (distributed according to F-distribution with 9 and 207 degrees of freedom: 8.538761.
P-value computed by Iman and Daveport Test: 7.61193742282255E-11.

2 Post hoc comparisons

Results achieved on post hoc comparisons for $\alpha = 0.05$, $\alpha = 0.10$ and adjusted p-values.

2.1 P-values for $\alpha = 0.05$

Nemenyi's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.001111.

Holm's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.001429.

i	algorithms	$z = (R_0 - R_i)/SE$	p	Holm
45	SVRCC vs. MORF	5.387064	0	0.001111
44	SVRCC vs. RC	5.315554	0	0.001136
43	MORF vs. SVRRC	4.838823	0.000001	0.001163
42	RC vs. SVRRC	4.767313	0.000002	0.00119
41	SVRCC vs. ERC	4.099889	0.000041	0.00122
40	SVRCC vs. MTSC	3.861523	0.000113	0.00125
39	SVRCC vs. MTS	3.599321	0.000319	0.001282
38	ERC vs. SVRRC	3.551648	0.000383	0.001316
37	SVRCC vs. ST	3.408629	0.000653	0.001351
36	MTSC vs. SVRRC	3.313282	0.000922	0.001389
35	MORF vs. SVR	3.12259	0.001793	0.001429
34	MTS vs. SVRRC	3.05108	0.00228	0.001471
33	RC vs. SVR	3.05108	0.00228	0.001515
32	MORF vs. ERCC	2.884224	0.003924	0.001563
31	ST vs. SVRRC	2.860388	0.004231	0.001613
30	RC vs. ERCC	2.812715	0.004913	0.001667
29	SVRCC vs. ERCC	2.502839	0.01232	0.001724
28	SVRCC vs. SVR	2.264474	0.023545	0.001786
27	MORF vs. ST	1.978435	0.04788	0.001852
26	ERCC vs. SVRRC	1.954598	0.050631	0.001923
25	ST vs. RC	1.906925	0.05653	0.002
24	ERC vs. SVR	1.835415	0.066444	0.002083
23	MORF vs. MTS	1.787742	0.073818	0.002174
22	SVR vs. SVRRC	1.716233	0.086119	0.002273
21	MTS vs. RC	1.716233	0.086119	0.002381
20	ERC vs. ERCC	1.59705	0.110255	0.0025
19	MTSC vs. SVR	1.59705	0.110255	0.002632
18	MORF vs. MTSC	1.52554	0.127124	0.002778
17	MTSC vs. RC	1.45403	0.145938	0.002941
16	MTSC vs. ERCC	1.358684	0.174247	0.003125
15	MTS vs. SVR	1.334848	0.181926	0.003333
14	MORF vs. ERC	1.287174	0.198033	0.003571
13	RC vs. ERC	1.215665	0.224113	0.003846
12	ST vs. SVR	1.144155	0.252559	0.004167
11	MTS vs. ERCC	1.096482	0.272868	0.004545
10	ST vs. ERCC	0.905789	0.365047	0.005
9	ST vs. ERC	0.69126	0.489402	0.005556
8	SVRCC vs. SVRRC	0.548241	0.583526	0.00625
7	MTS vs. ERC	0.500568	0.616675	0.007143
6	ST vs. MTSC	0.452895	0.650625	0.008333
5	MTS vs. MTSC	0.262202	0.793166	0.01
4	MTSC vs. ERC	0.238366	0.811598	0.0125
3	ERCC vs. SVR	0.238366	0.811598	0.016667
2	ST vs. MTS	0.190693	0.848767	0.025
1	MORF vs. RC	0.07151	0.942992	0.05

Table 2: P-values Table for $\alpha = 0.05$

2.2 P-values for $\alpha = 0.10$

Nemenyi's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.002222.

Holm's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.003125.

i	algorithms	$z = (R_0 - R_i)/SE$	p	Holm
45	SVRCC vs. MORF	5.387064	0	0.002222
44	SVRCC vs. RC	5.315554	0	0.002273
43	MORF vs. SVRRC	4.838823	0.000001	0.002326
42	RC vs. SVRRC	4.767313	0.000002	0.002381
41	SVRCC vs. ERC	4.099889	0.000041	0.002439
40	SVRCC vs. MTSC	3.861523	0.000113	0.0025
39	SVRCC vs. MTS	3.599321	0.000319	0.002564
38	ERC vs. SVRRC	3.551648	0.000383	0.002632
37	SVRCC vs. ST	3.408629	0.000653	0.002703
36	MTSC vs. SVRRC	3.313282	0.000922	0.002778
35	MORF vs. SVR	3.12259	0.001793	0.002857
34	MTS vs. SVRRC	3.05108	0.00228	0.002941
33	RC vs. SVR	3.05108	0.00228	0.00303
32	MORF vs. ERCC	2.884224	0.003924	0.003125
31	ST vs. SVRRC	2.860388	0.004231	0.003226
30	RC vs. ERCC	2.812715	0.004913	0.003333
29	SVRCC vs. ERCC	2.502839	0.01232	0.003448
28	SVRCC vs. SVR	2.264474	0.023545	0.003571
27	MORF vs. ST	1.978435	0.04788	0.003704
26	ERCC vs. SVRRC	1.954598	0.050631	0.003846
25	ST vs. RC	1.906925	0.05653	0.004
24	ERC vs. SVR	1.835415	0.066444	0.004167
23	MORF vs. MTS	1.787742	0.073818	0.004348
22	SVR vs. SVRRC	1.716233	0.086119	0.004545
21	MTS vs. RC	1.716233	0.086119	0.004762
20	ERC vs. ERCC	1.59705	0.110255	0.005
19	MTSC vs. SVR	1.59705	0.110255	0.005263
18	MORF vs. MTSC	1.52554	0.127124	0.005556
17	MTSC vs. RC	1.45403	0.145938	0.005882
16	MTSC vs. ERCC	1.358684	0.174247	0.00625
15	MTS vs. SVR	1.334848	0.181926	0.006667
14	MORF vs. ERC	1.287174	0.198033	0.007143
13	RC vs. ERC	1.215665	0.224113	0.007692
12	ST vs. SVR	1.144155	0.252559	0.008333
11	MTS vs. ERCC	1.096482	0.272868	0.009091
10	ST vs. ERCC	0.905789	0.365047	0.01
9	ST vs. ERC	0.69126	0.489402	0.011111
8	SVRCC vs. SVRRC	0.548241	0.583526	0.0125
7	MTS vs. ERC	0.500568	0.616675	0.014286
6	ST vs. MTSC	0.452895	0.650625	0.016667
5	MTS vs. MTSC	0.262202	0.793166	0.02
4	MTSC vs. ERC	0.238366	0.811598	0.025
3	ERCC vs. SVR	0.238366	0.811598	0.033333
2	ST vs. MTS	0.190693	0.848767	0.05
1	MORF vs. RC	0.07151	0.942992	0.1

Table 3: P-values Table for $\alpha = 0.10$

2.3 Adjusted p-values

i	hypothesis	unadjusted p	p_{Neme}	p_{Holm}
1	SVRCC vs .MORF	0	0.000003	0.000003
2	SVRCC vs .RC	0	0.000005	0.000005
3	MORF vs .SVRRC	0.000001	0.000059	0.000056
4	RC vs .SVRRC	0.000002	0.000084	0.000078
5	SVRCC vs .ERC	0.000041	0.00186	0.001695
6	SVRCC vs .MTSC	0.000113	0.005071	0.004507
7	SVRCC vs .MTS	0.000319	0.014357	0.012443
8	ERC vs .SVRRC	0.000383	0.017227	0.014547
9	SVRCC vs .ST	0.000653	0.029381	0.024157
10	MTSC vs .SVRRC	0.000922	0.041494	0.033195
11	MORF vs .SVR	0.001793	0.08067	0.062744
12	MTS vs .SVRRC	0.00228	0.102609	0.077527
13	RC vs .SVR	0.00228	0.102609	0.077527
14	MORF vs .ERCC	0.003924	0.176571	0.125561
15	ST vs .SVRRC	0.004231	0.190405	0.131168
16	RC vs .ERCC	0.004913	0.221064	0.147376
17	SVRCC vs .ERCC	0.01232	0.554407	0.357284
18	SVRCC vs .SVR	0.023545	1.059525	0.65926
19	MORF vs .ST	0.04788	2.154585	1.292751
20	ERCC vs .SVRRC	0.050631	2.278373	1.316393
21	ST vs .RC	0.05653	2.543862	1.413257
22	ERC vs .SVR	0.066444	2.989987	1.59466
23	MORF vs .MTS	0.073818	3.321791	1.697804
24	SVR vs .SVRRC	0.086119	3.875376	1.894628
25	MTS vs .RC	0.086119	3.875376	1.894628
26	ERC vs .ERCC	0.110255	4.961457	2.205092
27	MTSC vs .SVR	0.110255	4.961457	2.205092
28	MORF vs .MTSC	0.127124	5.720599	2.28824
29	MTSC vs .RC	0.145938	6.567204	2.480944
30	MTSC vs .ERCC	0.174247	7.841101	2.787947
31	MTS vs .SVR	0.181926	8.18668	2.787947
32	MORF vs .ERC	0.198033	8.911506	2.787947
33	RC vs .ERC	0.224113	10.085069	2.913464
34	ST vs .SVR	0.252559	11.365169	3.030712
35	MTS vs .ERCC	0.272868	12.279056	3.030712
36	ST vs .ERCC	0.365047	16.427129	3.650473
37	ST vs .ERC	0.489402	22.023087	4.404617
38	SVRCC vs .SVRRC	0.583526	26.25869	4.668212
39	MTS vs .ERC	0.616675	27.750388	4.668212
40	ST vs .MTSC	0.650625	29.278105	4.668212
41	MTS vs .MTSC	0.793166	35.69245	4.668212
42	MTSC vs .ERC	0.811598	36.521888	4.668212
43	ERCC vs .SVR	0.811598	36.521888	4.668212
44	ST vs .MTS	0.848767	38.194493	4.668212
45	MORF vs .RC	0.942992	42.434645	4.668212

Table 4: Adjusted p-values