Output tables for the test of Multiple comparisons.

October 30, 2021

1 Average rankings of Friedman test

Average ranks obtained by applying the Friedman procedure

Algorithm	Ranking
brm-original	3.4032
brm-correlation	4.1129
brm-cosine	4.1989
brm-manhattan	3.3871
gmm	3.0968
isof	5.1559
ocsvm	4.6452

Table 1: Average Rankings of the algorithms

Friedman statistic considering reduction performance (distributed according to chi-square with 6 degrees of freedom: 66.806452.
P-value computed by Friedman Test: 3.577260709874963E-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 $\alpha = 0.05$

i	algorithms	$z = (R_0 - R_i)/SE$	p	Holm
21	gmm vs. isof	6.499934	0	0.002381
20	brm-manhattan vs. isof	5.583494	0	0.0025
19	brm-original vs. isof	5.532581	0	0.002632
18	gmm vs. ocsvm	4.887678	0.000001	0.002778
17	brm-manhattan vs. ocsvm	3.971239	0.000071	0.002941
16	brm-original vs. ocsvm	3.920325	0.000088	0.003125
15	brm-cosine vs. gmm	3.479077	0.000503	0.003333
14	brm-correlation vs. isof	3.292395	0.000993	0.003571
13	brm-correlation vs. gmm	3.207539	0.001339	0.003846
12	brm-cosine vs. isof	3.020857	0.002521	0.004167
11	brm-cosine vs. brm-manhattan	2.562637	0.010388	0.004545
10	brm-original vs. brm-cosine	2.511724	0.012014	0.005
9	brm-correlation vs. brm-manhattan	2.291099	0.021958	0.005556
8	brm-original vs. brm-correlation	2.240186	0.025079	0.00625
7	brm-correlation vs. ocsvm	1.680139	0.09293	0.007143
6	isof vs. ocsvm	1.612255	0.106906	0.008333
5	brm-cosine vs. ocsvm	1.408602	0.158953	0.01
4	brm-original vs. gmm	0.967353	0.333368	0.0125
3	brm-manhattan vs. gmm	0.91644	0.359436	0.016667
2	brm-correlation vs. brm-cosine	0.271538	0.785978	0.025
1	brm-original vs. brm-manhattan	0.050913	0.959395	0.05

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

Holm's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.004545.

2.2 P-values for $\alpha = 0.10$

i	algorithms	$z = (R_0 - R_i)/SE$	p	Holm
21	gmm vs. isof	6.499934	0	0.004762
20	brm-manhattan vs. isof	5.583494	0	0.005
19	brm-original vs. isof	5.532581	0	0.005263
18	gmm vs. ocsvm	4.887678	0.000001	0.005556
17	brm-manhattan vs. ocsvm	3.971239	0.000071	0.005882
16	brm-original vs. ocsvm	3.920325	0.000088	0.00625
15	brm-cosine vs. gmm	3.479077	0.000503	0.006667
14	brm-correlation vs. isof	3.292395	0.000993	0.007143
13	brm-correlation vs. gmm	3.207539	0.001339	0.007692
12	brm-cosine vs. isof	3.020857	0.002521	0.008333
11	brm-cosine vs. brm-manhattan	2.562637	0.010388	0.009091
10	brm-original vs. brm-cosine	2.511724	0.012014	0.01
9	brm-correlation vs. brm-manhattan	2.291099	0.021958	0.011111
8	brm-original vs. brm-correlation	2.240186	0.025079	0.0125
7	brm-correlation vs. ocsvm	1.680139	0.09293	0.014286
6	isof vs. ocsvm	1.612255	0.106906	0.016667
5	brm-cosine vs. ocsvm	1.408602	0.158953	0.02
4	brm-original vs. gmm	0.967353	0.333368	0.025
3	brm-manhattan vs. gmm	0.91644	0.359436	0.033333
2	brm-correlation vs. brm-cosine	0.271538	0.785978	0.05
1	brm-original vs. brm-manhattan	0.050913	0.959395	0.1

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

Holm's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.009091.

2.3 Adjusted p-values

i	hypothesis	unadjusted p	p_{Holm}
1	gmm vs .isof	0	0
2	brm-manhattan vs .isof	0	0
3	brm-original vs .isof	0	0.000001
4	gmm vs .ocsvm	0.000001	0.000018
5	brm-manhattan vs .ocsvm	0.000071	0.001215
6	brm-original vs .ocsvm	0.000088	0.001415
7	brm-cosine vs .gmm	0.000503	0.007547
8	brm-correlation vs .isof	0.000993	0.013907
9	brm-correlation vs .gmm	0.001339	0.017404
10	brm-cosine vs .isof	0.002521	0.030247
11	brm-cosine vs .brm-manhattan	0.010388	0.114269
12	brm-original vs .brm-cosine	0.012014	0.120143
13	brm-correlation vs .brm-manhattan	0.021958	0.197619
14	brm-original vs .brm-correlation	0.025079	0.200631
15	brm-correlation vs .ocsvm	0.09293	0.650511
16	isof vs .ocsvm	0.106906	0.650511
17	brm-cosine vs .ocsvm	0.158953	0.794765
18	brm-original vs .gmm	0.333368	1.33347
19	brm-manhattan vs .gmm	0.359436	1.33347
20	brm-correlation vs .brm-cosine	0.785978	1.571955
21	brm-original vs .brm-manhattan	0.959395	1.571955

Table 4: Adjusted p-values