

Results

April 6, 2021

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

Table 1: Average Rankings of the algorithms

Algorithm	Ranking
svdd	2.59090909090909
svdd des	2.136363636363636
svdd desthr	1.272727272727272

Friedman statistic considering reduction performance (distributed according to chi-square with 2 degrees of freedom: 19.727272727272542.  
P-value computed by Friedman Test: 5.203282570365175E-5.

Iman and Davenport statistic considering reduction performance (distributed according to F-distribution with 2 and 42 degrees of freedom: 17.067415730336787.

P-value computed by Iman and Daveport Test: 3.758234665599347E-6.

Bonferroni-Dunn’s procedure rejects those hypotheses that have a p-value  $\leq 0.025$ .

Table 2: Holm / Hochberg Table for  $\alpha = 0.05$

$i$	algorithm	$z = (R_0 - R_i)/SE$	$p$	Holm/Hochberg/Hommel
2	svdd	4.371914496377571	1.2316176136565982E-5	0.025
1	svdd des	2.864357773488755	0.0041785575681665	0.05

Hochberg's procedure rejects those hypotheses that have a p-value  $\leq 0.05$ .  
Hommel's procedure rejects all hypotheses.

Table 3: Holm / Hochberg Table for  $\alpha = 0.10$

$i$	algorithm	$z = (R_0 - R_i)/SE$	$p$	Holm/Hochberg/Hommel
2	svdd	4.371914496377571	1.2316176136565982E-5	0.05
1	svdd des	2.864357773488755	0.0041785575681665	0.1

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value  $\leq 0.05$ .  
Hochberg's procedure rejects those hypotheses that have a p-value  $\leq 0.1$ .  
Hommel's procedure rejects all hypotheses.

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Table 4: Adjusted  $p$ -values

$i$	algorithm	unadjusted $p$	$p_{Bonf}$	$p_{Holm}$	$p_{Hoch}$	$p_{Hommel}$
1	svdd	1.2316176136565982E-5	2.4632352273131964E-5	2.4632352273131964E-5	2.4632352273131964E-5	2.4632352273131964E-5
2	svdd des	0.0041785575681665	0.008357115136333	0.0041785575681665	0.0041785575681665	0.0041785575681665

Table 5: Holm / Shaffer Table for  $\alpha = 0.05$

$i$	algorithms	$z = (R_0 - R_i)/SE$	$p$	Holm	Shaffer
3	svdd vs. svdd destr	4.371914496377571	1.2316176136565982E-5	0.016666666666666666	0.016666666666666666
2	svdd des vs. svdd destr	2.864357773488755	0.0041785575681665	0.025	0.05
1	svdd vs. svdd des	1.507556722888167	0.13166801602281455	0.05	0.05

Nemenyi's procedure rejects those hypotheses that have a p-value  $\leq 0.016666666666666666$ .  
Holm's procedure rejects those hypotheses that have a p-value  $\leq 0.05$ .

Shaffer's procedure rejects those hypotheses that have a p-value  $\leq 0.016666666666666666$ .  
 Bergmann's procedure rejects these hypotheses:

- svdd vs. svdd desthr
- svdd des vs. svdd desthr

Table 6: Holm / Shaffer Table for  $\alpha = 0.10$

$i$	algorithms	$z = (R_0 - R_i) / SE$	$p$	Holm	Shaffer
3	svdd vs. svdd desthr	4.371914496377571	1.2316176136565982E-5	0.03333333333333333	0.03333333333333333
2	svdd des vs. svdd desthr	2.864357773488755	0.0041785575681665	0.05	0.1
1	svdd vs. svdd des	1.507556722888167	0.13166801602281455	0.1	0.1

Nemenyi's procedure rejects those hypotheses that have a p-value  $\leq 0.03333333333333333$ .  
 Holm's procedure rejects those hypotheses that have a p-value  $\leq 0.1$ .  
 Shaffer's procedure rejects those hypotheses that have a p-value  $\leq 0.03333333333333333$ .  
 Bergmann's procedure rejects these hypotheses:

- svdd vs. svdd desthr
- svdd des vs. svdd desthr

Table 7: Adjusted p-values

$i$	hypothesis	unadjusted $p$	$p_{Nemen}$	$p_{Holm}$	$p_{Shaf}$	$p_{Berg}$
1	svdd vs svdd desthr	1.2316176136565982E-5	3.694852840969795E-5	3.694852840969795E-5	3.694852840969795E-5	3.694852840969795E-5
2	svdd des vs svdd desthr	0.0041785575681665	0.012535672704499502	0.008357115136333	0.0041785575681665	0.0041785575681665
3	svdd vs .svdd des	0.13166801602281455	0.3950040480684437	0.13166801602281455	0.13166801602281455	0.13166801602281455