Results

May 9, 2024

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

Table 1: Average Rankings of the algorithms

Algorithm	Ranking
LWRK	6.69
MS	9.74
SPT	4.04
WINQ	10.44
—Rule-DDQN—Complete-model-0	6.29
—Rule-DDQN—Complete-model-1	5.64
—Rule-DDQN—Complete-model-2	5.34
—Rule-DDQN—Complete-model-3	4.42
—Rule-DDQN—MachineCompressed-model-4	4.47
—Rule-DDQN—MachineCompressed-model-5	6.75
—Rule-DDQN—MachineCompressed-model-6	6.38
—Rule-DDQN—MachineCompressed-model-7	7.82

Friedman statistic considering reduction performance (distributed according to chi-square with 11 degrees of freedom: 1027.8308974358974.
P-value computed by Friedman Test: 0.0.

Iman and Davenport statistic considering reduction performance (distributed according to F-distribution with 11 and 3289 degrees of freedom: 135.25465071526875.
P-value computed by Iman and Daveport Test: 2.220446049250313E-16.

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

i	algorithm	$z = (R_0 - R_i)/SE$	p	Holm/Hochberg/Hommel
11	WINQ	21.739719055576344	8.642616194401946E-105	0.004545454545454546
10	MS	19.36193728387258	1.6168900822389078E-83	0.005
9	—Rule-DDQN—MachineCompressed-model-7	12.828698796858227	1.1325019874710293E-37	0.005555555555555556
8	—Rule-DDQN—MachineCompressed-model-5	9.20541228759553	3.403620707126604E-20	0.00625
7	LWRK	9.001602421449522	2.22446817932429E-19	0.007142857142857143
6	—Rule-DDQN—MachineCompressed-model-6	7.948584779695034	1.886542113875036E-15	0.008333333333333333
5	—Rule-DDQN—Complete-model-0	7.63154721013458	2.3195286532812787E-14	0.01
4	—Rule-DDQN—Complete-model-1	5.42926837872334	5.658553789767513E-8	0.0125
3	—Rule-DDQN—Complete-model-2	4.39889627765176	1.0880280840852651E-5	0.016666666666666666
2	—Rule-DDQN—MachineCompressed-model-4	1.4493146037050888	0.14724974459811274	0.025
1	—Rule-DDQN—Complete-model-3	1.279473048583391	0.20073052452038878	0.05

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value $\leq 0.004545454545454546$.
Holm's procedure rejects those hypotheses that have a p-value ≤ 0.025.
Hochberg's procedure rejects those hypotheses that have a p-value $\leq 0.016666666666666666$.

Hommel's procedure rejects those hypotheses that have a p-value ≤ 0.025.

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

i	algorithm	$z = (R_0 - R_i)/SE$	p	Holm/Hochberg/Hommel
11	WINQ	21.739719055576344	8.642616194401946E-105	0.009090909090909092
10	MS	19.36193728387258	1.6168900822389078E-83	0.01
9	—Rule-DDQN—MachineCompressed-model-7	12.828698796858227	1.1325019874710293E-37	0.011111111111111112
8	—Rule-DDQN—MachineCompressed-model-5	9.20541228759553	3.403620707126604E-20	0.0125
7	LWRK	9.001602421449522	2.22446817932429E-19	0.014285714285714287
6	—Rule-DDQN—MachineCompressed-model-6	7.948584779695034	1.886542113875036E-15	0.016666666666666666
5	—Rule-DDQN—Complete-model-0	7.631547210134588	2.3195286532812787E-14	0.02
4	—Rule-DDQN—Complete-model-1	5.42926837872334	5.658553789767513E-8	0.025
3	—Rule-DDQN—Complete-model-2	4.39889627765176	1.0880280840852651E-5	0.03333333333333333
2	—Rule-DDQN—MachineCompressed-model-4	1.4493146037050888	0.14724974459811274	0.05
1	—Rule-DDQN—Complete-model-3	1.279473048583391	0.20073052452038878	0.1

Bonferroni-Dunn's procedure rejects those hypotheses that have a p-value $\leq 0.009090909090909092$.
Holm's procedure rejects those hypotheses that have a p-value ≤ 0.05.
Hochberg's procedure rejects those hypotheses that have a p-value ≤ 0.03333333333333333.
Hommel's procedure rejects those hypotheses that have a p-value ≤ 0.025.

Table 4: Adjusted p-values

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	p_{Hoch}	p_{Homm}
1	WINQ	8.642616194401946E-105	9.506877813842141E-104	9.506877813842141E-104	9.506877813842141E-104	9.506877813842141E-104
2	MS	1.6168900822389078E-83	1.7785790904627985E-82	1.6168900822389078E-82	1.6168900822389078E-82	1.6168900822389078E-82
3	—Rule-DDQN—MachineCompressed-model-7	1.1325019874710293E-37	1.2457521862181322E-36	1.0192517887239264E-36	1.0192517887239264E-36	1.0192517887239264E-36
4	—Rule-DDQN—MachineCompressed-model-5	3.403620707126604E-20	3.743982777839264E-19	2.722896565701283E-19	2.722896565701283E-19	2.722896565701283E-19
5	LWRK	2.22446817932429E-19	2.446914997256719E-18	1.5571277255270028E-18	1.5571277255270028E-18	1.5571277255270028E-18
6	—Rule-DDQN—MachineCompressed-model-6	1.886542113875036E-15	2.0751963252625397E-14	1.1319252683250216E-14	1.1319252683250216E-14	1.1319252683250216E-14
7	—Rule-DDQN—Complete-model-0	2.3195286532812787E-14	2.5514815186094067E-13	1.1597643266406393E-13	1.1597643266406393E-13	1.1597643266406393E-13
8	—Rule-DDQN—Complete-model-1	5.658553789767513E-8	6.224409168744265E-7	2.2634215159070052E-7	2.2634215159070052E-7	2.2634215159070052E-7
9	—Rule-DDQN—Complete-model-2	1.0880280840852651E-5	1.1968308924937917E-4	3.264084252255795E-5	3.264084252255795E-5	3.264084252255795E-5
10	—Rule-DDQN—MachineCompressed-model-4	0.14724974459811274	1.6197471905792402	0.2944994891962255	0.20073052452038878	0.20073052452038878
11	—Rule-DDQN—Complete-model-3	0.20073052452038878	2.2080357697242765	0.2944994891962255	0.20073052452038878	0.20073052452038878

Nemenyi's procedure rejects those hypotheses that have a p-value $\leq 7.575757575757576E-4$.
Holm's procedure rejects those hypotheses that have a p-value $\leq 0.0038461538461538464$.
Shaffer's procedure rejects those hypotheses that have a p-value $\leq 7.575757575757576E-4$.
Nemenyi's procedure rejects those hypotheses that have a p-value $\leq 0.0015151515151515152$.
Holm's procedure rejects those hypotheses that have a p-value $\leq 0.007692307692307693$.
Shaffer's procedure rejects those hypotheses that have a p-value $\leq 0.0015151515151515152$.

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

i	algorithms	$z = (R_0 - R_i)/SE$	p	Holm	Shaffer
66	SPT vs. WINQ	21.739719055576344	8.642616194401946E-105	7.575757575757576E-4	7.575757575757576E-4
65	WINQ vs. —Rule-DDQN—Complete-model-3	20.460246006992953	4.869204062691252E-93	7.692307692307692E-4	9.090909090909091E-4
64	WINQ vs. —Rule-DDQN—MachineCompressed-model-4	20.290404451871254	1.563040930143417E-91	7.8125E-4	9.090909090909091E-4
63	MS vs. SPT	19.36193728387258	1.6168900822389078E-83	7.936507936507937E-4	9.090909090909091E-4
62	MS vs. —Rule-DDQN—Complete-model-3	18.08246423528919	4.380601698140543E-73	8.064516129032258E-4	9.090909090909091E-4
61	MS vs. —Rule-DDQN—MachineCompressed-model-4	17.91262268016749	9.400015831826995E-72	8.19672131147541E-4	9.090909090909091E-4
60	WINQ vs. —Rule-DDQN—Complete-model-2	17.340822777924583	2.3140074008561892E-67	8.333333333333334E-4	9.090909090909091E-4
59	WINQ vs. —Rule-DDQN—Complete-model-1	16.310450676853005	8.317679094600027E-60	8.474576271186442E-4	9.090909090909091E-4
58	MS vs. —Rule-DDQN—Complete-model-2	14.96304100622082	1.2803895559678508E-50	8.620689655172415E-4	9.090909090909091E-4
57	WINQ vs. —Rule-DDQN—Complete-model-0	14.108171845441756	3.3823296560829395E-45	8.771929824561404E-4	9.090909090909091E-4
56	MS vs. —Rule-DDQN—Complete-model-1	13.93266890514924	4.010830031156359E-44	8.928571428571429E-4	9.090909090909091E-4
55	WINQ vs. —Rule-DDQN—MachineCompressed-model-6	13.79113427588131	2.881926593640512E-43	9.090909090909091E-4	9.090909090909091E-4
54	SPT vs. —Rule-DDQN—MachineCompressed-model-7	12.828698796858227	1.1325019874710293E-37	9.25925925925926E-4	0.0010869565217391304
53	LWRK vs. WINQ	12.738116634126822	3.630534246324264E-37	9.433962264150943E-4	0.0010869565217391304
52	WINQ vs. —Rule-DDQN—MachineCompressed-model-5	12.534306767980814	4.845801777539026E-36	9.615384615384616E-4	0.0010869565217391304
51	MS vs. —Rule-DDQN—Complete-model-0	11.730390073737993	8.90473594155013E-32	9.80392156862745E-4	0.0010869565217391304
50	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-7	11.549225748274836	7.448844360175087E-31	0.001	0.0010869565217391304
49	MS vs. —Rule-DDQN—MachineCompressed-model-6	11.413352504177547	3.586350655303346E-30	0.0010204081632653062	0.0010869565217391304
48	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-7	11.379384193153138	5.2972453569363294E-30	0.0010416666666666667	0.0010869565217391304
47	LWRK vs. MS	10.36033486242306	3.75644608468032E-25	0.0010638297872340426	0.0010869565217391304
46	MS vs. —Rule-DDQN—MachineCompressed-model-5	10.156524996277051	3.0992643990620706E-24	0.0010869565217391304	0.0010869565217391304
45	SPT vs. —Rule-DDQN—MachineCompressed-model-5	9.20541228759553	3.403620707126604E-20	0.0011111111111111111	0.0011111111111111111
44	LWRK vs. SPT	9.001602421449522	2.22446817932429E-19	0.0011363636363636365	0.00128205128205128
43	WINQ vs. —Rule-DDQN—MachineCompressed-model-7	8.911020258718118	5.056507494375602E-19	0.0011627906976744186	0.00128205128205128
42	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-7	8.429802519206467	3.4624903697944216E-17	0.0011904761904761906	0.00128205128205128
41	SPT vs. —Rule-DDQN—MachineCompressed-model-6	7.948584779695034	1.886542113875036E-15	0.0012195121951219512	0.00128205128205128
40	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-5	7.925939239012139	2.2642829296729817E-15	0.00125	0.00128205128205128
39	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-5	7.756097683890441	8.758257223647671E-15	0.001282051282051282	0.00128205128205128
38	LWRK vs. —Rule-DDQN—Complete-model-3	7.722129372866131	1.144021859949866E-14	0.0013157894736842105	0.0013513513513513514
37	SPT vs. —Rule-DDQN—Complete-model-0	7.631547210134588	2.3195286532812787E-14	0.0013513513513513514	0.0013513513513513514
36	LWRK vs. —Rule-DDQN—MachineCompressed-model-4	7.552287817744433	4.276780478668061E-14	0.0013888888888888889	0.0013888888888888889
35	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-7	7.399430418134886	1.3676986458193043E-13	0.0014285714285714286	0.0014705882352941176
34	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-6	6.669111731111643	2.5735627613369894E-11	0.0014705882352941176	0.0014705882352941176
33	MS vs. —Rule-DDQN—MachineCompressed-model-7	6.533238487014355	6.436253076987365E-11	0.0015151515151515152	0.0016129032258064516
32	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-6	6.499270175989945	8.071059875981736E-11	0.0015625	0.0016129032258064516
31	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-3	6.352074161551197	2.124308577884041E-10	0.0016129032258064516	0.0016129032258064516
30	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-4	6.1822326064294995	6.32013064599226E-10	0.0016666666666666668	0.0016666666666666668
29	SPT vs. —Rule-DDQN—Complete-model-1	5.42926837872334	5.658553789767513E-8	0.001724137931034483	0.001724137931034483
28	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-7	5.1971515867236375	2.0236534131488097E-7	0.0017857142857142859	0.0017857142857142859
27	—Rule-DDQN—MachineCompressed-model-6 vs. —Rule-DDQN—MachineCompressed-model-7	4.880114017163192	1.0602452679994856E-6	0.0018518518518518518	0.0018518518518518518
26	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-5	4.80651600994377	1.5358318947052117E-6	0.0019230769230769232	0.002
25	LWRK vs. —Rule-DDQN—Complete-model-2	4.602706143797762	4.170364463187909E-6	0.002	0.002
24	SPT vs. —Rule-DDQN—Complete-model-2	4.39889627765176	1.0880280840852651E-5	0.0020833333333333333	0.0020833333333333333
23	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—Complete-model-3	4.149795330139949	3.327726876614024E-5	0.002173913043478261	0.002173913043478261
22	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-4	3.9799537750182514	6.892866985950807E-5	0.002272727272727273	0.002272727272727273
21	LWRK vs. —Rule-DDQN—MachineCompressed-model-7	3.827096375408704	1.2966375699944048E-4	0.0023809523809523809	0.0023809523809523809
20	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-5	3.7761439088721893	1.5927499059117234E-4	0.0025	0.0025
19	—Rule-DDQN—MachineCompressed-model-5 vs. —Rule-DDQN—MachineCompressed-model-7	3.6232865092626962	2.9088330683335877E-4	0.002631578947368421	0.002631578947368421
18	LWRK vs. —Rule-DDQN—Complete-model-1	3.5723340427261814	3.5381369976626633E-4	0.002777777777777778	0.002777777777777778
17	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-6	3.5496885020432742	3.856872273562548E-4	0.0029411764705882353	0.0029411764705882353
16	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-2	3.2326509324828283	0.0012264732718624452	0.003125	0.003125
15	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—Complete-model-3	3.119423229068369	0.0018120547457172744	0.0033333333333333335	0.0033333333333333335
14	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-4	2.949581673946671	0.003182044551896756	0.0035714285714285718	0.0035714285714285718
13	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-6	2.519316400971694	0.011758294400598161	0.0038461538461538464	0.0038461538461538464
12	MS vs. WINQ	2.3777817717037633	0.01741713028689465	0.004166666666666667	0.004166666666666667
11	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-1	2.202278831411248	0.027645618545702782	0.004545454545454546	0.004545454545454546
10	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-5	1.5738650774609413	0.11551864505729023	0.005	0.005
9	SPT vs. —Rule-DDQN—MachineCompressed-model-4	1.4493146037050888	0.14724974459811274	0.005555555555555556	0.005555555555555556
8	LWRK vs. —Rule-DDQN—Complete-model-0	1.3700552113149336	0.1706696675652869	0.00625	0.00625
7	SPT vs. —Rule-DDQN—Complete-model-3	1.279473048583391	0.20073052452038878	0.007142857142857143	0.007142857142857143
6	—Rule-DDQN—MachineCompressed-model-5 vs. —Rule-DDQN—MachineCompressed-model-6	1.2568275079004956	0.2088161029308383	0.008333333333333333	0.008333333333333333
5	LWRK vs. —Rule-DDQN—MachineCompressed-model-6	1.0530176417544876	0.29233290665127654	0.01	0.01
4	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—Complete-model-2	1.0303721010715803	0.3028353645635499	0.0125	0.0125
3	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-6	0.3170375695604458	0.7512150951774321	0.016666666666666666	0.016666666666666666
2	LWRK vs. —Rule-DDQN—MachineCompressed-model-5	0.2038098661460078	0.8385020825980304	0.025	0.025
1	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-4	0.1698415551216978	0.8651347454054403	0.05	0.05

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

i	algorithms	$z = (R_0 - R_i)/SE$	p	Holm	Shaffer
66	SPT vs. WINQ	21.739719055576344	8.642616194401946E-105	0.0015151515151515152	0.0015151515151515152
65	WINQ vs. —Rule-DDQN—Complete-model-3	20.460246006992953	4.869204062691252E-93	0.0015384615384615385	0.0018181818181818182
64	WINQ vs. —Rule-DDQN—MachineCompressed-model-4	20.290404451871254	1.563040930143417E-91	0.0015625	0.0018181818181818182
63	MS vs. SPT	19.36193728387258	1.6168900822389078E-83	0.0015873015873015873	0.0018181818181818182
62	MS vs. —Rule-DDQN—Complete-model-3	18.08246423528919	4.380601698140543E-73	0.0016129032258064516	0.0018181818181818182
61	MS vs. —Rule-DDQN—MachineCompressed-model-4	17.91262268016749	9.400015831826995E-72	0.001639344262295082	0.0018181818181818182
60	WINQ vs. —Rule-DDQN—Complete-model-2	17.340822777924583	2.3140074008561892E-67	0.0016666666666666668	0.0018181818181818182
59	WINQ vs. —Rule-DDQN—Complete-model-1	16.310450676853005	8.317679094600027E-60	0.0016949152542372883	0.0018181818181818182
58	MS vs. —Rule-DDQN—Complete-model-2	14.96304100622082	1.2803895559678508E-50	0.001724137931034483	0.0018181818181818182
57	WINQ vs. —Rule-DDQN—Complete-model-0	14.108171845441756	3.3823296560829395E-45	0.0017543859649122807	0.0018181818181818182
56	MS vs. —Rule-DDQN—Complete-model-1	13.93266890514924	4.010830031156359E-44	0.0017857142857142859	0.0018181818181818182
55	WINQ vs. —Rule-DDQN—MachineCompressed-model-6	13.79113427588131	2.881926593640512E-43	0.0018181818181818182	0.0018181818181818182
54	SPT vs. —Rule-DDQN—MachineCompressed-model-7	12.828698796858227	1.1325019874710293E-37	0.001851851851851852	0.002173913043478261
53	LWRK vs. WINQ	12.738116634126822	3.630534246324264E-37	0.0018867924528301887	0.002173913043478261
52	WINQ vs. —Rule-DDQN—MachineCompressed-model-5	12.534306767980814	4.845801777539026E-36	0.0019230769230769232	0.002173913043478261
51	MS vs. —Rule-DDQN—Complete-model-0	11.730390073737993	8.90473594155013E-32	0.00196078431372549	0.002173913043478261
50	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-7	11.549225748274836	7.448844360175087E-31	0.002	0.002173913043478261
49	MS vs. —Rule-DDQN—MachineCompressed-model-6	11.413352504177547	3.586350655303346E-30	0.0020408163265306124	0.002173913043478261
48	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-7	11.379384193153138	5.2972453569363294E-30	0.0020833333333333333	0.002173913043478261
47	LWRK vs. MS	10.36033486242306	3.75644608468032E-25	0.002127659574468085	0.002173913043478261
46	MS vs. —Rule-DDQN—MachineCompressed-model-5	10.156524996277051	3.0992643990620706E-24	0.002173913043478261	0.002173913043478261
45	SPT vs. —Rule-DDQN—MachineCompressed-model-5	9.20541228759553	3.403620707126604E-20	0.0022222222222222222	0.0022222222222222222
44	LWRK vs. SPT	9.001602421449522	2.22446817932429E-19	0.002272727272727273	0.00256410256410256
43	WINQ vs. —Rule-DDQN—MachineCompressed-model-7	8.911020258718118	5.056507494375602E-19	0.002325581395348837	0.00256410256410256
42	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-7	8.429802519206467	3.4624903697944216E-17	0.002380952380952381	0.00256410256410256
41	SPT vs. —Rule-DDQN—MachineCompressed-model-6	7.948584779695034	1.886542113875036E-15	0.0024390243902439024	0.00256410256410256
40	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-5	7.925939239012139	2.2642829296729817E-15	0.0025	0.00256410256410256
39	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-5	7.756097683890441	8.758257223647671E-15	0.002564102564102564	0.00256410256410256
38	LWRK vs. —Rule-DDQN—Complete-model-3	7.722129372866131	1.144021859949866E-14	0.002631578947368421	0.002702702702702703
37	SPT vs. —Rule-DDQN—Complete-model-0	7.631547210134588	2.3195286532812787E-14	0.002702702702702703	0.002702702702702703
36	LWRK vs. —Rule-DDQN—MachineCompressed-model-4	7.552287817744433	4.276780478668061E-14	0.002777777777777778	0.002777777777777778
35	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-7	7.399430418134886	1.3676986458193043E-13	0.002857142857142857	0.0029411764705882353
34	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-6	6.669111731111643	2.5735627613369894E-11	0.0029411764705882353	0.0029411764705882353
33	MS vs. —Rule-DDQN—MachineCompressed-model-7	6.533238487014355	6.436253076987365E-11	0.0030303030303030303	0.0032258064516129032
32	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-6	6.499270175989945	8.071059875981736E-11	0.003125	0.0032258064516129032
31	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-3	6.352074161551197	2.124308577884041E-10	0.0032258064516129032	0.0032258064516129032
30	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-4	6.1822326064294995	6.32013064599226E-10	0.0033333333333333335	0.0033333333333333335
29	SPT vs. —Rule-DDQN—Complete-model-1	5.42926837872334	5.658553789767513E-8	0.003448275862068966	0.003448275862068966
28	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-7	5.1971515867236375	2.0236534131488097E-7	0.0035714285714285718	0.0035714285714285718
27	—Rule-DDQN—MachineCompressed-model-6 vs. —Rule-DDQN—MachineCompressed-model-7	4.880114017163192	1.0602452679994856E-6	0.003703703703703704	0.003703703703703704
26	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-5	4.80651600994377	1.5358318947052117E-6	0.0038461538461538464	0.004
25	LWRK vs. —Rule-DDQN—Complete-model-2	4.602706143797762	4.170364463187909E-6	0.004	0.004
24	SPT vs. —Rule-DDQN—Complete-model-2	4.39889627765176	1.0880280840852651E-5	0.004166666666666667	0.004166666666666667
23	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—Complete-model-3	4.149795330139949	3.327726876614024E-5	0.004347826086956522	0.004347826086956522
22	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-4	3.9799537750182514	6.892866985950807E-5	0.004545454545454546	0.004545454545454546
21	LWRK vs. —Rule-DDQN—MachineCompressed-model-7	3.827096375408704	1.2966375699944048E-4	0.004761904761904762	0.004761904761904762
20	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-5	3.7761439088721893	1.5927499059117234E-4	0.005	0.005
19	—Rule-DDQN—MachineCompressed-model-5 vs. —Rule-DDQN—MachineCompressed-model-7	3.6232865092626962	2.9088330683335877E-4	0.005263157894736842	0.005263157894736842
18	LWRK vs. —Rule-DDQN—Complete-model-1	3.5723340427261814	3.5381369976626633E-4	0.005555555555555556	0.005555555555555556
17	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-6	3.5496885020432742	3.856872273562548E-4	0.0058823529411764705	0.0058823529411764705
16	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-2	3.2326509324828283	0.0012264732718624452	0.00625	0.00625
15	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—Complete-model-3	3.119423229068369	0.0018120547457172744	0.006666666666666667	0.006666666666666667
14	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-4	2.949581673946671	0.003182044551896756	0.007142857142857143	0.007142857142857143
13	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-6	2.519316400971694	0.011758294400598161	0.007692307692307693	0.007692307692307693
12	MS vs. WINQ	2.3777817717037633	0.01741713028689465	0.008333333333333333	0.008333333333333333
11	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-1	2.202278831411248	0.027645618545702782	0.009090909090909092	0.009090909090909092
10	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-5	1.5738650774609413	0.11551864505729023	0.01	0.01
9	SPT vs. —Rule-DDQN—MachineCompressed-model-4	1.4493146037050888	0.14724974459811274	0.011111111111111112	0.011111111111111112
8	LWRK vs. —Rule-DDQN—Complete-model-0	1.3700552113149336	0.1706696675652869	0.0125	0.0125
7	SPT vs. —Rule-DDQN—Complete-model-3	1.279473048583391	0.20073052452038878	0.014285714285714287	0.014285714285714287
6	—Rule-DDQN—MachineCompressed-model-5 vs. —Rule-DDQN—MachineCompressed-model-6	1.2568275079004956	0.2088161029308383	0.016666666666666666	0.016666666666666666
5	LWRK vs. —Rule-DDQN—MachineCompressed-model-6	1.0530176417544876	0.29233290665127654	0.02	0.02
4	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—Complete-model-2	1.0303721010715803	0.3028353645635499	0.025	0.025
3	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-6	0.3170375695604458	0.7512150951774321	0.03333333333333333	0.03333333333333333
2	LWRK vs. —Rule-DDQN—MachineCompressed-model-5	0.2038098661460078	0.8385020825980304	0.05	0.05
1	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-4	0.1698415551216978	0.8651347454054403	0.1	0.1

Table 7: Adjusted p-values

i	hypothesis	unadjusted p	p_{Neme}	p_{Holm}	p_{Shaf}	p_{Berg}
1	SPT vs .WINQ	8.642616194401946E-105	5.704126688305285E-103	5.704126688305285E-103	5.704126688305285E-103	0.0
2	WINQ vs .—Rule-DDQN—Complete-model-3	4.869204062691252E-93	3.213674681376226E-91	3.164982640749313 6E-91	2.678062234480188E-91	0.0
3	WINQ vs .—Rule-DDQN—MachineCompressed-model-4	1.563040930143417E-91	1.031607013894655 1E-89	1.000346195291786 8E-89	8.596725115788793E-90	0.0
4	MS vs .SPT	1.616890082238907 8E-83	1.067147454277679 2E-81	1.018640751810511 9E-81	8.892895452313993E-82	0.0
5	MS vs .—Rule-DDQN—Complete-model-3	4.380601698140543E-73	2.891197120772758 4E-71	2.715973052847137E-71	2.409330933977298 8E-71	0.0
6	MS vs .—Rule-DDQN—MachineCompressed-model-4	9.400015831826995E-72	6.204010449005816E-70	5.734009657414467E-70	5.170008707504847E-70	0.0
7	WINQ vs .—Rule-DDQN—Complete-model-2	2.314007400856189 2E-67	1.527244884565084 8E-65	1.388404440513713 5E-65	1.272704070470904E-65	0.0
8	WINQ vs .—Rule-DDQN—Complete-model-1	8.317679094600027E-60	5.489668202436018E-58	4.907430665814016E-58	4.574723502030015E-58	0.0
9	MS vs .—Rule-DDQN—Complete-model-2	1.280389559678508E-50	8.450571069387815E-49	7.426259424613534E-49	7.042142557823179E-49	0.0
10	WINQ vs .—Rule-DDQN—Complete-model-0	3.382329656082939 5E-45	2.23233757301474E-43	1.927927903967275 3E-43	1.860281310845616 7E-43	0.0
11	MS vs .—Rule-DDQN—Complete-model-1	4.010830031156359E-44	2.647147820563197E-42	2.246064817447561E-42	2.205956517135997 5E-42	0.0
12	WINQ vs .—Rule-DDQN—MachineCompressed-model-6	2.881926593640512E-43	1.902071551802738E-41	1.585059626502281 5E-41	1.585059626502281 5E-41	0.0
13	SPT vs .—Rule-DDQN—MachineCompressed-model-7	1.132501987471029 3E-37	7.474513117308794E-36	6.115510732343559E-36	5.209509142366735E-36	0.0
14	LWRK vs .WINQ	3.630534246324264E-37	2.396152602574014 3E-35	1.92418315055186E-35	1.670045753309161 4E-35	0.0
15	WINQ vs .—Rule-DDQN—MachineCompressed-model-5	4.845801777539026E-36	3.198229173175757E-34	2.519816924320293 4E-34	2.229068176679 52E-34	0.0
16	MS vs .—Rule-DDQN—Complete-model-0	8.90473594155013E-32	5.877125721423086E-30	4.541415330190566 5E-30	4.096178533113 06E-30	0.0
17	—Rule-DDQN—Complete-model-3 vs .—Rule-DDQN—MachineCompressed-model-7	7.448844360175087E-31	4.916237277715557E-29	3.724422180087543 3E-29	3.42646840568054E-29	0.0
18	MS vs .—Rule-DDQN—MachineCompressed-model-6	3.586350655303346E-30	2.366991432500208E-28	1.757311821098639 5E-28	1.649721301439539 2E-28	0.0
19	—Rule-DDQN—MachineCompressed-model-4 vs .—Rule-DDQN—MachineCompressed-model-7	5.297245356936329 4E-30	3.496181935577977 4E-28	2.542677771329438E-28	2.436732864190711 4E-28	0.0
20	LWRK vs .MS	3.75644608468032E-25	2.479254415889011 3E-23	1.765529659799750 6E-23	1.727965198952947 2E-23	0.0
21	MS vs .—Rule-DDQN—MachineCompressed-model-5	3.099264399062070 6E-24	2.045514503380966 5E-22	1.425661623568552 5E-22	1.425661623568552 5E-22	0.0
22	SPT vs .—Rule-DDQN—MachineCompressed-model-5	3.403620707126604E-20	2.246389666703558 6E-18	1.531629318206971 7E-18	1.531629318206971 7E-18	0.0
23	LWRK vs .SPT	2.22446817932429E-19	1.468148998354031E-17	9.787659989026876E-18	8.67542589936473E-18	0.0
24	WINQ vs .—Rule-DDQN—MachineCompressed-model-7	5.056507494375602E-19	3.337294946287897 5E-17	2.174298222581508 7E-17	1.972037922806484 7E-17	0.0
25	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—MachineCompressed-model-7	3.462490369794421 6E-17	2.285243644064318E-15	1.454245955313657E-15	1.350371244219824 5E-15	0.0
26	SPT vs .—Rule-DDQN—MachineCompressed-model-6	1.886542113875036E-15	1.245117795157523 7E-13	7.734822666887647E-14	7.35751424411264E-14	0.0
27	—Rule-DDQN—Complete-model-3 vs .—Rule-DDQN—MachineCompressed-model-5	2.264282929672891 7E-15	1.494426733584168E-13	9.057131718691926E-14	8.830703425724629E-14	0.0
28	—Rule-DDQN—MachineCompressed-model-4 vs .—Rule-DDQN—MachineCompressed-model-5	8.758257223647671E-15	5.780449767607463E-13	3.415720317222592E-13	3.415720317222592E-13	0.0
29	LWRK vs .—Rule-DDQN—Complete-model-3	1.144021859949866E-14	7.550544275669115E-13	4.347283067894907E-13	4.232880881145043E-13	0.0
30	SPT vs .—Rule-DDQN—Complete-model-0	2.319528653281278 7E-14	1.530888911165644E-12	8.582256017140732E-13	8.582256017140732E-13	0.0
31	LWRK vs .—Rule-DDQN—MachineCompressed-model-4	4.276780478668061E-14	2.822675115920922E-12	1.539640972320502E-12	1.539640972320502E-12	0.0
32	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—MachineCompressed-model-7	1.367698645819304 3E-13	9.026811062407408E-12	4.786945260367565E-12	4.650175395785634E-12	0.0
33	—Rule-DDQN—Complete-model-3 vs .—Rule-DDQN—MachineCompressed-model-6	2.573562761336989 4E-11	1.698551422482413E-9	8.750113388545764E-10	8.750113388545764E-10	0.0
34	MS vs .—Rule-DDQN—MachineCompressed-model-7	6.436253076987365E-11	4.247927030811661 5E-9	2.123963515405830 8E-9	1.995238453866083E-9	0.0
35	—Rule-DDQN—MachineCompressed-model-4 vs .—Rule-DDQN—MachineCompressed-model-6	8.071059875981736E-11	5.326899518147945E-9	2.582739160314154 4E-9	2.502028561554338 2E-9	0.0
36	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—Complete-model-3	2.124308577884041E-10	1.402043661403467E-8	6.585356591440527E-9	6.585356591440527E-9	0.0
37	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—MachineCompressed-model-4	6.320130646599226E-10	4.171286226354891 5E-8	1.896039193797678E-8	1.896039193797678E-8	0.0
38	SPT vs .—Rule-DDQN—Complete-model-1	5.658553789767513E-8	3.734645501246558 6E-6	1.640980599032578 9E-6	1.640980599032578 9E-6	0.0
39	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—MachineCompressed-model-7	2.023653413148809 7E-7	1.335611252678214 3E-5	5.666229556816667E-6	5.666229556816667E-6	0.0
40	—Rule-DDQN—MachineCompressed-model-6 vs .—Rule-DDQN—MachineCompressed-model-7	1.060245267999485 6E-6	6.997618768796605E-5	2.862662223598611E-5	2.862662223598611E-5	0.0
41	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—MachineCompressed-model-5	1.535831894705211 7E-6	1.013649050505439 8E-4	3.993162926233504E-5	3.839579736763029E-5	0.0
42	LWRK vs .—Rule-DDQN—Complete-model-2	4.170364463187909E-6	2.752440545704019 7E-4	1.042591115796972 4E-4	1.042591115796972E-4	0.0
43	SPT vs .—Rule-DDQN—Complete-model-2	1.088028084085265 1E-5	7.18098535496275E-4	2.611267401804636E-4	2.611267401804636E-4	0.0
44	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—Complete-model-3	3.327726876614024E-5	0.002196299738565 2555	7.653771816212255E-4	7.653771816212255E-4	0.0
45	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—MachineCompressed-model-4	6.892866985950807E-5	0.004549292210727 5326	0.001516430736909 1776	0.001516430736909 1776	0.0
46	LWRK vs .—Rule-DDQN—MachineCompressed-model-7	1.296637569994404 8E-4	0.008557807961963072	0.00272293889698825	0.00272293889698825	0.0
47	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—MachineCompressed-model-5	1.592749905911723 4E-4	0.010512149379017375	0.003185499811823 4466	0.003185499811823 4466	0.0
48	—Rule-DDQN—MachineCompressed-model-5 vs .—Rule-DDQN—MachineCompressed-model-7	2.908833068333587 7E-4	0.01919829825100168	0.005526782829833816	0.005526782829833816	0.0
49	LWRK vs .—Rule-DDQN—Complete-model-1	3.538136997662663 3E-4	0.02335170418457358	0.006368646595792794	0.006368646595792794	0.0
50	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—MachineCompressed-model-6	3.856872735625 48E-4	0.025455357005512817	0.006556682865056 3316	0.006556682865056 3316	0.0
51	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—Complete-model-2	0.001226473271862 4452	0.08094723594292139	0.01962357234979912 3	0.01962357234979912 3	0.0
52	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—Complete-model-3	0.001812054745717 2744	0.11959561321734011	0.027180821185759117	0.027180821185759117	0.0
53	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—MachineCompressed-model-4	0.003182044551896756	0.2100149404251859	0.04454862372655458	0.04454862372655458	0.0
54	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—MachineCompressed-model-6	0.011758294400598161	0.776047430439478 7	0.1528578272077761	0.1528578272077761	0.0
55	MS vs .WINQ	0.017417130286894 65	1.149530598935046 8	0.2090055634427358	0.2090055634427358	0.0
56	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—Complete-model-1	0.027645618545702782	1.8246108240163836	0.3041018040027306	0.3041018040027306	0.0
57	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—MachineCompressed-model-5	0.11551864505729023	7.624230573781155	1.1551864505729024	1.1551864505729024	0.0
58	SPT vs .—Rule-DDQN—MachineCompressed-model-4	0.147249744598112 74	9.71848314347544	1.3252477013830146	1.3252477013830146	0.0
59	LWRK vs .—Rule-DDQN—Complete-model-0	0.1706696675652869	11.264198059308935	1.3653573405222952	1.3653573405222952	0.0
60	SPT vs .—Rule-DDQN—Complete-model-3	0.200730524520388 78	13.24821461834566	1.4051136716427215	1.4051136716427215	0.0
61	—Rule-DDQN—MachineCompressed-model-5 vs .—Rule-DDQN—MachineCompressed-model-6	0.2088161029308383	13.781862793435328	1.4051136716427215	1.4051136716427215	0.0
62	LWRK vs .—Rule-DDQN—MachineCompressed-model-6	0.292332906651276 54	19.293971838984252	1.4616645332563827	1.4616645332563827	0.0
63	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—Complete-model-2	0.3028353645635499	19.987134061194293	1.4616645332563827	1.4616645332563827	0.0
64	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—MachineCompressed-model-6	0.7512150951774321	49.58019628171052	2.253645285532296	2.253645285532296	0.0
65	LWRK vs .—Rule-DDQN—MachineCompressed-model-5	0.8385020825980304	55.341137451470004	2.253645285532296	2.253645285532296	0.0
66	—Rule-DDQN—Complete-model-3 vs .—Rule-DDQN—MachineCompressed-model-4	0.8651347454054403	57.098893196759064	2.253645285532296	2.253645285532296	0.0