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	8.64261619401946E-105	0.00454545454545454546
10	MS	19.36193728387258	1.6168900822389078E-83	0.005
9	—Rule-DDQN—MachineCompressed-model-7	12.828698796858227	1.1325019874710293E-37	0.0055555555555555556
8	—Rule-DDQN—MachineCompressed-model-5	9.20541228759553	3.403620707126604E-20	0.00625
7	LWRK	9.001602421449522	2.22446817932429E-19	0.0071428571428571435
6	—Rule-DDQN—MachineCompressed-model-6	7.948584779695034	1.886542113875036E-15	0.008333333333333333
5	—Rule-DDQN—Complete-model-0	7.631547210134588	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	9.205412287559553	3.403620707126604E-20	0.0125
7	LWRK	9.001602421449522	2.22446817932429E-19	0.01428571428571428
6	—Rule-DDQN—MachineCompressed-model-6	7.948584779695034	1.886542113875036E-15	0.01666666666666666
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	1.4493146037650888	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	9.50687781384214E-104	9.50687781384214E-104	9.50687781384214E-104	9.50687781384214E-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	1.245752186218132E-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	2.263421515907052E-7	2.263421515907052E-7	2.263421515907052E-7
9	—Rule-DDQN—Complete-model-2	1.0880280840852651E-5	1.196830892493791E-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	4.8692040626912525E-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	4.3806016981405443E-73	8.064516129032258E-4	9.090909090909091E-4
61	MS vs. —Rule-DDQN—MachineCompressed-model-4	17.912622680016749	9.400015831826995E-72	8.196721311147541E-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	13.932668905144924	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	3.6305342463242464E-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	7.4488443601750878E-31	0.001	0.0010869565217391304
49	MS vs. —Rule-DDQN—MachineCompressed-model-6	11.413525044177547	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	9.205412287559553	3.4036207071266046E-20	0.00111111111111111111	0.00111111111111111111
44	LWRK vs. SPT	9.001602421449522	2.2244681793242E-19	0.0011363636363636365	0.00128205128205282
43	WINQ vs. —Rule-DDQN—MachineCompressed-model-7	8.91102025871818	5.056507494375602E-19	0.0011627906976744186	0.00128205128205282
42	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-7	8.429802519206467	3.4624903697944216E-17	0.0011904761904761906	0.00128205128205282
41	SPT vs. —Rule-DDQN—MachineCompressed-model-6	7.948584779695034	1.886542113875036E-15	0.0012195121951219512	0.00128205128205282
40	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-5	7.925939239012139	2.2642829296729817E-15	0.00125	0.00128205128205282
39	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-5	7.756097683890441	8.758257223647671E-15	0.00128205128205282	0.00128205128205282
38	LWRK vs. —Rule-DDQN—Complete-model-3	7.722129372866131	1.1440218599449866E-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	5.6585537897675113E-8	0.0017241379310344483	0.0017241379310344483
28	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-7	5.197151586723637	2.0236534131488097E-7	0.0017857142857142859	0.0017857142857142859
27	—Rule-DDQN—MachineCompressed-model-6 vs. —Rule-DDQN—MachineCompressed-model-7	4.880114017163192	1.0602452675994856E-6	0.0018518518518518152	0.0018518518518518152
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	0.0020833333333333333
24	SPT vs. —Rule-DDQN—Complete-model-2	4.39889627765194	1.0880280840852651E-5	0.0020833333333333333	0.0020833333333333333
23	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—Complete-model-3	4.149795330139949	3.3277268766140024E-5	0.0021739130434478261	0.0021739130434782861
22	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-4	3.9799537750182514	6.8928669859508078E-5	0.0022727272727272773	0.0022727272727272773
21	LWRK vs. —Rule-DDQN—MachineCompressed-model-7	3.827096375408704	1.2966375699994048E-4	0.0023809523809523811	0.0023809523809523811
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-6	3.6232865092626962	2.9088330683335877E-4	0.002631578947368421	0.002631578947368421
18	LWRK vs. —Rule-DDQN—Complete-model-1	3.5723340427261814	3.5381369976626633E-4	0.0027777777777778	0.0027777777777778
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	3.232650932482883	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	2.949581673946637	0.00318204455189676	0.003571428571428 5718	0.003571428571428 5718
13	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-6	2.519316400971694	0.011758294400598161	0.003846153846153 8464	0.003846153846153 8464
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	0.02764561845702782	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	0.0055555555555555556	0.0055555555555555556
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	0.2007305245203887 8	0.0071428571428571435	0.0071428571428571435
6	—Rule-DDQN—MachineCompressed-model-5 vs. —Rule-DDQN—MachineCompressed-model-6	1.2568275079004956	0.2088161029308383	0.0083333333333333333	0.0083333333333333333
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	4.8692040626691252E-93	0.0015384615384615385	0.001818181818181818182
64	WINQ vs. —Rule-DDQN—MachineCompressed-model-4	20.290404451871254	1.563040930143417E-91	0.0015625	0.001818181818181818182
63	MS vs. SPT	19.36193728387258	1.6168900822389078E-83	0.0015873015873015873	0.001818181818181818182
62	MS vs. —Rule-DDQN—Complete-model-3	18.082464235528919	4.3806016981405430E-73	0.0016129032258064516	0.001818181818181818182
61	MS vs. —Rule-DDQN—MachineCompressed-model-4	17.91262268016749	9.400015831826995E-72	0.0016393442622950082	0.001818181818181818182
60	WINQ vs. —Rule-DDQN—Complete-model-2	17.340822777924583	2.3140074008561892E-67	0.0016666666666666668	0.001818181818181818182
59	WINQ vs. —Rule-DDQN—Complete-model-1	16.310450676853005	8.3176790946000027E-60	0.0016949152542372883	0.001818181818181818182
58	MS vs. —Rule-DDQN—Complete-model-2	14.96304100622082	1.2803895559678508E-50	0.0017241379310344483	0.001818181818181818182
57	WINQ vs. —Rule-DDQN—Complete-model-0	14.108171845441756	3.3823296560829395E-45	0.0017543859649122807	0.001818181818181818182
56	MS vs. —Rule-DDQN—Complete-model-1	13.93266890514924	4.0108300311563559E-44	0.0017857142857142859	0.001818181818181818182
55	WINQ vs. —Rule-DDQN—MachineCompressed-model-6	13.7911342758131	2.881926593640512E-43	0.001818181818181818182	0.001818181818181818182
54	SPT vs. —Rule-DDQN—MachineCompressed-model-7	12.828698796858227	1.1325019874710293E-37	0.001851851851851852	0.002173913043478261
53	LWRK vs. WINQ	12.738116634126822	3.6305342463242264E-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	8.9047359415503E-32	0.0019607843137522549	0.002173913043478261
50	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-7	11.549225748274836	7.44884436017508E-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	3.099264390620706E-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	2.2244681793242E-19	0.0022727272727272727	0.002564102564102564
43	WINQ vs. —Rule-DDQN—MachineCompressed-model-7	8.91102025718118	5.056507494375602E-19	0.0023255581395348837	0.002564102564102564
42	—Rule-DDQN—Complete-model-2 vs. —Rule-DDQN—MachineCompressed-model-7	8.429802519206467	3.4624903697944216E-17	0.002380952380952381	0.002564102564102564
41	SPT vs. —Rule-DDQN—MachineCompressed-model-6	7.948584779695034	1.886542113875036E-15	0.0024390243902439024	0.002564102564102564
40	—Rule-DDQN—Complete-model-3 vs. —Rule-DDQN—MachineCompressed-model-5	7.925939239012139	2.2642829296729817E-15	0.0025	0.002564102564102564
39	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-5	7.756097683890441	8.7582572236476071E-15	0.002564102564102564	0.002564102564102564
38	LWRK vs. —Rule-DDQN—Complete-model-3	7.722129372866131	1.1440218599449866E-14	0.0026315789473684421	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	7.552287817744483	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	0.0032225806451629032
32	—Rule-DDQN—MachineCompressed-model-4 vs. —Rule-DDQN—MachineCompressed-model-6	6.499270175989945	8.071059875981736E-11	0.003125	0.0032225806451629032
31	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-3	6.352074161551197	2.124308577884041E-10	0.0032225806451629032	0.0032225806451629032
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	5.6585537897675513E-8	0.003448275862068966	0.003448275862068966
28	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—MachineCompressed-model-7	5.197151586723637	2.02365341314880978E-7	0.0035714285714285718	0.0035714285714285718
27	—Rule-DDQN—MachineCompressed-model-6 vs. —Rule-DDQN—MachineCompressed-model-7	4.880114017163192	1.0602452677999485E-6	0.0037037037037037	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	0.004166666666666667
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	3.3277268766140024E-5	0.0043478260869565522	0.0043478260869565522
22	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-4	3.979953775018251	6.892866985950807E-5	0.0045454545454545546	0.0045454545454545546
21	LWRK vs. —Rule-DDQN—MachineCompressed-model-7	3.827096375408704	1.2966375699994048E-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-6	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	3.8568722735625484E-4	0.0058823529411764705	0.0058823529411764705
16	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-2	3.232650932482283	0.001226473271862452	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	0.00318204455189756	0.0071428571428571435	0.0071428571428571435
13	—Rule-DDQN—Complete-model-1 vs. —Rule-DDQN—MachineCompressed-model-6	2.519316400971694	0.01175829440059816	0.007692307692307693	0.007692307692307693
12	MS vs. WINQ	2.3777817717037633	0.0174171302868946	0.008333333333333333	0.008333333333333333
11	—Rule-DDQN—Complete-model-0 vs. —Rule-DDQN—Complete-model-1	2.202278831411248	0.02764561854570278	0.0090909090909092	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-3	1.3700552113149336	0.1706696675652869	0.0125	0.0125
7	SPT vs. —Rule-DDQN—Complete-model-3	1.279473048553391	0.20073052452038878	0.014285714285714287	0.014285714285714287
6	—Rule-DDQN—MachineCompressed-model-5 vs. —Rule-DDQN—MachineCompressed-model-6	1.2568275079004956	0.20881610293088878	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	3.1649826407493136E-91	2.678062234480188E-91	0.0
3	WINQ vs .—Rule-DDQN—MachineCompressed-model-4	1.563040930143417E-91	1.0316070138946551E-89	1.0003461952917868E-89	8.596725115788793E-90	0.0
4	MS vs .SPT	1.616890082238978E-83	1.0671474542776792E-81	1.0186407518105119E-81	8.892895452313993E-82	0.0
5	MS vs .—Rule-DDQN—Complete-model-3	4.380601698140543E-73	2.891197120772584E-71	2.71597305284713737E-71	2.409330933977299E-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	2.314007400856189E-67	1.5272448845650848E-65	1.3884044405137135E-65	1.272740070470904E-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	1.2803895559678508E-50	8.450571069387815E-49	7.426259424613534E-49	7.042142557823179E-49	0.0
10	WINQ vs .—Rule-DDQN—Complete-model-0	3.3823296560829395E-45	2.23233757301474E-43	1.9279279039672753E-43	1.8602813108456167E-43	0.0
11	MS vs .—Rule-DDQN—Complete-model-1	4.010830031156359E-44	2.647147820563197E-42	2.2460648174475561E-42	2.2059565171359975E-42	0.0
12	WINQ vs .—Rule-DDQN—MachineCompressed-model-6	2.881926593640512E-43	1.902071551802738E-41	1.5850596265022815E-41	1.5850596265022815E-41	0.0
13	SPT vs .—Rule-DDQN—MachineCompressed-model-7	1.132501987471 0293E-37	7.474513117308794E-36	6.115510732343559E-36	5.209509142366735E-36	0.0
14	LWRK vs .WINQ	3.630534246324264E-37	2.3961526025740143E-35	1.92418315055186E-35	1.6700457533091614E-35	0.0
15	WINQ vs .—Rule-DDQN—MachineCompressed-model-5	4.845801777539026E-36	3.198229173175757E-34	2.5198169243202934E-34	2.229068817667952E-34	0.0
16	MS vs .—Rule-DDQN—Complete-model-0	8.90473594155013E-32	5.877125721423086E-30	4.5414153301905665E-30	4.096178533113066E-30	0.0
17	—Rule-DDQN—Complete-model-3 vs .—Rule-DDQN—MachineCompressed-model-7	7.448844360175087E-31	4.916237277715557E-29	3.7244221800875433E-29	3.426468405680540E-29	0.0
18	MS vs .—Rule-DDQN—MachineCompressed-model-6	3.586350655303346E-30	2.366991432500208E-28	1.7573118210986395E-28	1.6497213014395392E-28	0.0
19	—Rule-DDQN—MachineCompressed-model-4 vs .—Rule-DDQN—MachineCompressed-model-7	5.2972453569363294E-30	3.4961819355779774E-28	2.542677713294838E-28	2.4367328641907114E-28	0.0
20	LWRK vs .MS	3.75644608468032E-25	2.4792544158890113E-23	1.7655296597997506E-23	1.7279651989529472E-23	0.0
21	MS vs .—Rule-DDQN—MachineCompressed-model-5	3.099264399062 0706E-24	2.045514503380 9665E-22	1.4256616235685525E-22	1.4256616235685525E-22	0.0
22	SPT vs .—Rule-DDQN—MachineCompressed-model-5	3.4036207071 26604E-20	2.246389666703 5586E-18	1.5316293182069717E-18	1.5316293182069717E-18	0.0
23	LWRK vs .SPT	2.224468179324429E-19	1.468148998354031E-17	9.787659989026876E-18	8.675425899364473E-18	0.0
24	WINQ vs .—Rule-DDQN—MachineCompressed-model-7	5.056507494375602E-19	3.337294946287 8975E-17	2.1742982225815087E-17	1.9720379228064847E-17	0.0
25	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—MachineCompressed-model-7	3.462490369794 4216E-17	2.285243644064318E-15	1.454245955313657E-15	1.3503712442198245E-15	0.0
26	SPT vs .—Rule-DDQN—MachineCompressed-model-6	1.886542113875036E-15	1.2451177951575237E-13	7.734822666887647E-14	7.35751424411264E-14	0.0
27	—Rule-DDQN—Complete-model-3 vs .—Rule-DDQN—MachineCompressed-model-5	2.264282929672 9817E-15	1.494426733584168E-13	9.057131718691926E-14	8.830703425724629E-14	0.0
28	—Rule-DDQN—MachineCompressed-model-4 vs .—Rule-DDQN—MachineCompressed-model-5	8.7582572236476 71E-15	5.780449767607463E-13	3.41572031722259 2E-13	3.4157203172225592E-13	0.0
29	LWRK vs .—Rule-DDQN—Complete-model-3	1.144021859949866E-14	7.550544275669115E-13	4.3472830678094907E-13	4.2328808818145043E-13	0.0
30	SPT vs .—Rule-DDQN—Complete-model-0	2.3195286532812787E-14	1.530888911165644E-12	8.582256017140732E-13	8.582256017140732E-13	0.0
31	LWRK vs .—Rule-DDQN—MachineCompressed-model-4	4.276780478668061E-14	2.82267511592092E-12	1.539640972320502E-12	1.539640972320502E-12	0.0
32	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—MachineCompressed-model-7	1.367698645819 3043E-13	9.02681106240 7408E-12	4.786945260367565E-12	4.650175395785634E-12	0.0
33	—Rule-DDQN—Complete-model-3 vs .—Rule-DDQN—MachineCompressed-model-6	2.573562761336 9894E-11	1.698551422482438E-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	1.995238453586083E-9	0.0
35	—Rule-DDQN—MachineCompressed-model-4 vs .—Rule-DDQN—MachineCompressed-model-6	8.071059875981736E-11	5.326899518147945E-9	2.5827391603141554E-9	2.5020285615543382E-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	6.32013064599226E-10	4.171286226354891 5E-8	1.896039193797678E-8	1.896039193797678E-8	0.0
38	SPT vs .—Rule-DDQN—Complete-model-1	5.58553789767513E-8	3.734645012465566E-6	1.640980599032578 9E-6	1.6409805990325789E-6	0.0
39	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—MachineCompressed-model-7	2.0236534131488097E-7	1.335611252678214 3E-5	5.66229556816667E-6	5.66229556816667E-6	0.0
40	—Rule-DDQN—MachineCompressed-model-0 vs .—Rule-DDQN—MachineCompressed-model-7	1.06024526799948 56E-6	6.99761876879660 5E-5	2.862662223598611E-5	2.862662223598611E-5	0.0
41	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—MachineCompressed-model-5	1.535381894705211 7E-6	1.013649050505 4398E-4	3.993162926233 5504E-5	3.839579736763029E-5	0.0
42	LWRK vs .—Rule-DDQN—Complete-model-2	4.170364463187909E-6	2.752440545704 0197E-4	1.0425911157969772E-4	1.0425911157969772E-4	0.0
43	SPT vs .—Rule-DDQN—Complete-model-2	1.0880280840582651E-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	0.0015164307369091776	0.0015164307369091776	0.0
46	LWRK vs .—Rule-DDQN—MachineCompressed-model-7	1.2966375699944048E-4	0.008557807961963072	0.0027229389698825	0.0027229389698825	0.0
47	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—MachineCompressed-model-5	1.5927490059117234E-4	0.010512149379017375	0.0031854998118234466	0.0031854998118234466	0.0
48	—Rule-DDQN—MachineCompressed-model-5 vs .—Rule-DDQN—MachineCompressed-model-7	2.9088330683335877E-4	0.01919829825100168	0.005526782829833816	0.005526782829833816	0.0
49	LWRK vs .—Rule-DDQN—Complete-model-1	3.5381369976626633E-4	0.02335170418457358	0.006368646595792794	0.006368646595792794	0.0
50	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—MachineCompressed-model-6	3.85687227356254 8E-4	0.02545535700551 2817	0.006556468286505 63316	0.00655646828650563316	0.0
51	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—Complete-model-2	0.00122647327186 24452	0.0809472359429 2139	0.01962357234979 9123	0.019623572349799123	0.0
52	—Rule-DDQN—Complete-model-2 vs .—Rule-DDQN—Complete-model-3	0.0018120547457172744	0.11959561321734011	0.027180821185759117	0.027180821185759117	0.0
53	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—MachineCompressed-model-4	0.00318204455189 6756	0.210014940425 1859	0.04454862372655 458	0.04454862372655458	0.0
54	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—MachineCompressed-model-6	0.011758294400598161	0.7760474304394787	0.1528578272077761	0.1528578272077761	0.0
55	MS vs .WINQ	0.01741713028689465	1.1495305989350468	0.209005563442 7358	0.2090055634427358	0.0
56	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—Complete-model-1	0.027645618545702782	1.824610824016 3836	0.304101804002 7306	0.3041018040027306	0.0
57	—Rule-DDQN—Complete-model-0 vs .—Rule-DDQN—MachineCompressed-model-5	0.11551864505729023	7.62423057378 1155	1.155186450572 9024	1.1551864505729024	0.0
58	SPT vs .—Rule-DDQN—MachineCompressed-model-4	0.14724974459811274	9.7184831434 7544	1.3252477013830146	1.3252477013830146	0.0
59	LWRK vs .—Rule-DDQN—Complete-model-0	0.1706699675652869	11.264198059308935	1.3653573405222952	1.3653573405222952	0.0
60	SPT vs .—Rule-DDQN—Complete-model-3	0.20073052452038878	13.24821461834566	1.4051136716427215	1.4051136716427215	0.0
61	—Rule-DDQN—MachineCompressed-model-5 vs .—Rule-DDQN—MachineCompressed-model-6	0.20881610293 08383	13.78186279343 5328	1.4051136716427215	1.4051136716427215	0.0
62	LWRK vs .—Rule-DDQN—MachineCompressed-model-6	0.29233290665127654	19.29397183898 4252	1.4616645332563827	1.4616645332563827	0.0
63	—Rule-DDQN—Complete-model-1 vs .—Rule-DDQN—Complete-model-2	0.3028353645635499	19.98713406119 4293	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	55.34113745147 0004	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