

Appendix VI: Several Machine Games

This appendix contains several games which were played by the machine against itself and by the machine against human players.

Game Number One: In this game the player had the first move. His rating was 40 and the helper was used. The player opened with center square 26, and the machine took corner square 00, developing as many lines as possible with little regard for blocking. The player followed with 25, blocking the machine's major diagonal and developing a two in a row. The machine was not bothered and took 14, developing a two in a row and several new one in a rows. The player then took 31, forming a winning "three in a plane" situation and blocking the machine's other major diagonal. The machine still ignores the player and develops its own three in a plane situation by taking 17. At this point the helper prints out "Lw", showing that the player can force to a win, but the machine can also force to a win if the player does not force. The player now proceeds to force the win in the plane. The rating drops to twenty.

Game Number Two: The player again has the first move and a rating of 40 but this time the helper was not used. The game proceeds as before for three moves, but now the player is not aware of the win and takes 32 to develop a more powerful position. As predicted the machine has a forcing win and proceeds to show it. The rating rises to 46.

Game number one

Your number is 01
Rating 40

First move by player

Your move is 26
26

My move is 00

Your move is 25
25

My move is 14

Your move is 31
31

My move is 17

Lw
Your move is 23
23

My move is 34

Lw
Your move is 21
21

My move is 35

Lw
Your move is 20
20

My move is 22

Lw
Your move is 27
27

My move is 24

Lw
Your move is 37
37

My move is 33

w
Your move is 32

I lost
New Rating 20

Game number two

Your number is 02
Rating 40

First move by player

Your move is 26
26

My move is 00

Your move is 25
25

My move is 14

Your move is 31
31

My move is 17

Your move is 32
32

My move is 15

Suggest you move 16

My move is 04

Suggest you move 10

My move is 05

Suggest you move 12

My move is 06

Suggest you move 07

My move is 11

Suggest you move 03

I win at 01

New Rating 46

Game Number Three: The player has the first move and a rating of 00 and the helper. The player opens with 25 and the machine immediately blocks at 00. The player now takes 51, developing a two in a row on the diagonal. The machine immediately blocks this two in a row, picking 01 over 75 in order to develop a two in a row at the same time. The player now picks 32, forming two new two in a rows on the diagonals. The machine blocks at 20, again developing a two in a row. By moving at 31 the player now develops a winning three in a plane situation, and develops a two in a row outside the plane as well. The machine has a three in a plane but it is not winning, so the win is blocked by taking 30. The helper shows that the player can lose but not win, so he blocks the win by taking 60. This develops a new two in a row and several important one in a rows. The machine takes 45, blocking the major diagonal and three one in a rows, but it is not enough and the helper shows a win. The player proceeds to execute an eight move forced win.

Game Number Four: The machine is now given the first move and the player has a rating of 00 and the helper. Opening play follows the same lines as before, with the machine opening at 00 and 04 and the player at 25 and 51. The machine now blocks the two in a row by taking 75, as this develops more new one in a rows than 01. Because of the large weight assigned to blocking two in a rows the machine must take one of the two. This looks like a bad move at this point since the machine is surrendering the offensive

Game Number Three

Your number is 03
Rating 00

First move by player

Your move is 25
25

My move is 00

Your move is 51
51

My move is 01

Your move is 32
32

My move is 20

Your move is 31
31

My move is 30

L
Your move is 60
60

My move is 45

w
Your move is 70
70

My move is 13

w
Your move is 74
74

My move is 64

Lw
Your move is 71
71

My move is 11

Lw
Your move is 63
63

My move is 66

Lw
Your move is 61
61

My move is 62

Lw
Your move is 72
72

My move is 73

Lw
Your move is 65
65

My move is 75

w
Your move is 77
77

I lost
New Rating 00

Game Number Four

Your number is 04
Rating 00

First move by machine

My move is 00

Your move is 25
25

My move is 03

Your move is 51
51

My move is 75

Your move is 32
32

My move is 13
L

Your move is 17
17

My move is 60
L

Your move is 22
22

My move is 26
Lw

Your move is 20
20

My move is 37
37

Your move is 21
21

My move is 23
Lw

Your move is 31
31

My move is 35
Lw

Your move is 33
33

My move is 30
Lw

Your move is 63
63

My move is 47
Lw

Your move is 71
71

My move is 11
Lw

Your move is 14
14

My move is 46
Lw

Your move is 15
15

My move is 16
Lw

Your move is 45
45

My move is 61
Lw

Your move is 55
55

My move is 41
41

Your move is 74
74

My move is 66
bL

Your move is 36
36

I lost

New Rating 00

for a not too important block. The player again takes 32 to form the diagonal two in a rows. The machine blocks one of them by taking 13 and also develops a winning situation in the bottom plane. The player provides a very effective block at 17 and the machine counters with 60, blocking the major diagonal and creating another winning planar situation. The player's block at 22 is a much more powerful move than it appears. The machine blocks the plane with 26 and develops another winning situation, but it is not enough as the player has a longer win. The twelve move forcing sequence is now executed, despite the fact that the player has only one two in a row to start with.

Game Number Five: This game was played by the machine against itself, with a rating of 00 for both options. The game opened with the first player taking 00 and 03 to develop an early two in a row. The second player took 25 and 01 to block the major diagonal and the two in a row. The first player's block at 51 also generated a two in a row on the main diagonal. This blocking and generating continued with the second player taking 26 and the first player 24. The second player cannot block and generate at this point so he blocks a one in a row as well with 50. The first player's next move at 31 puts him back out in the lead. The block and generate process continues with the second player taking 11 and the first player 05. The second player now refuses to block, taking 32 instead to generate two two in a rows, three one in a rows, and block two one in a rows. The move of 20 by the

Game Number Five

	<u>First Player</u>	<u>Second Player</u>
Regular	00	25
	03	01
	51	26
	24	50
	31	11
	05	32
	20	60
	45	12
	52	14
Forcing	55	41
	57	40
	54	56
	43	46
	23	63
	53	47
	73	10
	13	33
	17	07
	77	37
27		

first player blocks one of the two in a rows and generates two new two in a rows. The second player again blocks and generates with 60, but the first player blocks and generates two with 45. The second player's move at 12 also blocks and generates two, but the two new two in a rows generated by the first player's move at 52 are too much. The move at 14 blocks several intersecting lines, but the first player still has an eleven move force to win.