

CS4710 Homework 3 Writeup

Case I: No Wind

1. Value Function:

	0	1	2	3	4	5	6
0	-6.0	-5.0	-4.0	-3.0	-3.0	-3.0	-3.0
1	-6.0	-5.0	-4.0	-3.0	-2.0	-2.0	-2.0
2	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	-1.0
3	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	0.0
4	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	-1.0
5	-6.0	-5.0	-4.0	-3.0	-2.0	-2.0	-2.0
6	-6.0	-5.0	-4.0	-3.0	-3.0	-3.0	-3.0

2. Policy π from (3,0):

States: (3,0) -- (3,1) -- (3,2) -- (3,3) -- (3,4) -- (3,5) -- (3,6)

Actions: E E E E E E

States: (3,0) -- (2,1) -- (2,2) -- (2,3) -- (2,4) -- (2,5) -- (3,6)

Actions: NE E E E E SE

States omitted: (3,6)

Actions omitted: stay

Case II: Light Wind

1. Value Function:

	0	1	2	3	4	5	6
0	-6.0	-6.0	-6.0	-6.0	-5.0	-4.0	-3.0
1	-6.0	-5.0	-5.0	-5.0	-4.0	-3.0	-2.0
2	-6.0	-5.0	-4.0	-4.0	-3.0	-2.0	-1.0
3	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	0.0
4	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	-1.0
5	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	-2.0
6	-6.0	-5.0	-4.0	-3.0	-2.0	-2.0	-2.0

2. Policy π from (3,0):

States: (3,0) -- (3,1) -- (3,2) -- (3,3) -- (3,4) -- (3,5) -- (3,6)

Actions: E E E SE SE SE

States: (3,0) -- (2,1) -- (2,2) -- (3,3) -- (3,4) -- (3,5) -- (3,6)

Actions: NE E SE SE SE SE

States omitted: (3,6)

Actions omitted: stay

Case III: Strong Wind

1. Value Function:

	0	1	2	3	4	5	6
0	-9.0	-8.0	-7.0	-6.0	-5.0	-4.0	-3.0
1	-8.0	-8.0	-7.0	-6.0	-5.0	-4.0	-2.0
2	-7.0	-7.0	-7.0	-6.0	-5.0	-3.0	-1.0
3	-6.0	-6.0	-6.0	-6.0	-4.0	-2.0	0.0
4	-6.0	-5.0	-5.0	-5.0	-3.0	-1.0	-1.0
5	-6.0	-5.0	-4.0	-4.0	-2.0	-1.0	-2.0
6	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	-2.0

2. Policy π from (3,0):

States: (3,0) -- (4,1) -- (5,2) -- (6,3) -- (5,4) -- (4,5) -- (3,6)

Actions: SE SE SE NE NE NE

States omitted: (3,6)

Actions omitted: stay