```
Last login: Thu Apr  2 11:59:37 on ttys000
Run-Mac:~ mac$ cd ~/.ssh
Run-Mac:.ssh mac$ ssh -i "Runzhe_Song_0110.pem" ubuntu@ec2-35-168-113-18.compute-1.amazonaws.com
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1063-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Thu Apr  2 16:01:09 UTC 2020

  System load:  84.94              Processes:           862
  Usage of /:   56.2% of 15.45GB   Users logged in:     0
  Memory usage: 0%                 IP address for ens5: 172.31.78.245
  Swap usage:   0%

 * Kubernetes 1.18 GA is now available! See https://microk8s.io for docs or
   install it with:

     sudo snap install microk8s --channel=1.18 --classic

 * Multipass 1.1 adds proxy support for developers behind enterprise
   firewalls. Rapid prototyping for cloud operations just got easier.

     https://multipass.run/

 * Canonical Livepatch is available for installation.
   - Reduce system reboots and improve kernel security. Activate at:
     https://ubuntu.com/livepatch

50 packages can be updated.
0 updates are security updates.


Last login: Thu Apr  2 15:59:42 2020 from 107.13.161.147
ubuntu@ip-172-31-78-245:~$ export openblas_num_threads=1; export OMP_NUM_THREADS=1; python EC2.py
12:01, 04/02; num of cores:96

Basic setting:[T, rep_times, sd_O, sd_D, sd_R, sd_u_O, w_O, w_A, [M_in_R, mean_reversion, pois0, simple, u_O_u_D]] = [None, 96, 10, 10,
None, 0.3, 0.5, 1, [True, False, True, False, 10]]


-------------------------------------
[pattern_seed, day, sd_R] = [2, 7, 10]

max(u_O) =  197.9
O_threshold = 80
means of Order:

87.8 97.8 52.4 162.7 58.1

77.3 115.7 68.5 72.4 75.7

117.4 197.9 100.7 71.1 116.9

83.2 98.9 141.5 79.5 99.8

76.4 94.9 107.4 73.9 89.9

target policy:

1 1 0 1 0

0 1 0 0 0

1 1 1 0 1

1 1 1 0 1

0 1 1 0 1

number of reward locations:  15
O_threshold = 90
target policy:

0 1 0 1 0

0 1 0 0 0

1 1 1 0 1

0 1 1 0 1

0 1 1 0 0

number of reward locations:  12
O_threshold = 100
target policy:
```

```
15 -th region DONE!
16 -th region DONE!
17 -th region DONE!
18 -th region DONE!
19 -th region DONE!
20 -th region DONE!
21 -th region DONE!
22 -th region DONE!
23 -th region DONE!
24 -th region DONE!
25 -th region DONE!
1 -th region DONE!
2 -th region DONE!
3 -th region DONE!
4 -th region DONE!
5 -th region DONE!
6 -th region DONE!
7 -th region DONE!
8 -th region DONE!
9 -th region DONE!
10 -th region DONE!
11 -th region DONE!
12 -th region DONE!
13 -th region DONE!
14 -th region DONE!
15 -th region DONE!
16 -th region DONE!
17 -th region DONE!
18 -th region DONE!
19 -th region DONE!
20 -th region DONE!
21 -th region DONE!
22 -th region DONE!
23 -th region DONE!
24 -th region DONE!
25 -th region DONE!

----------------------------------------
Value of Behaviour policy:60.786
O_threshold = 80
MC for this TARGET:[70.884, 0.141]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[0.29, 0.13, -1.02]][[1.22, -36106.3, -10.1]]
std:[[0.63, 0.63, 0.38]][[0.38, 240417.86, 0.23]]
MSE:[[0.69, 0.64, 1.09]][[1.28, 243113.99, 10.1]]
MSE(-DR):[[0.0, -0.05, 0.4]][[0.59, 243113.3, 9.41]]
***
==============


O_threshold = 90
MC for this TARGET:[69.371, 0.133]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[-0.14, -0.28, -1.07]][[-0.56, -25769.71, -8.59]]
std:[[0.64, 0.65, 0.41]][[0.36, 186579.25, 0.23]]
MSE:[[0.66, 0.71, 1.15]][[0.67, 188350.46, 8.59]]
MSE(-DR):[[0.0, 0.05, 0.49]][[0.01, 188349.8, 7.93]]
***
==============


O_threshold = 100
MC for this TARGET:[68.94, 0.132]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[-2.76, -2.88, -3.33]][[-4.82, -56714.54, -8.15]]
std:[[0.66, 0.66, 0.39]][[0.34, 298245.59, 0.23]]
MSE:[[2.84, 2.95, 3.35]][[4.83, 303590.14, 8.15]]
MSE(-DR):[[0.0, 0.11, 0.51]][[1.99, 303587.3, 5.31]]
***
==============


O_threshold = 110
MC for this TARGET:[70.484, 0.135]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[-6.44, -6.53, -6.75]][[-8.8, -79239.09, -9.7]]
std:[[0.66, 0.66, 0.44]][[0.34, 574443.18, 0.23]]
MSE:[[6.47, 6.56, 6.76]][[8.81, 579882.57, 9.7]]
MSE(-DR):[[0.0, 0.09, 0.29]][[2.34, 579876.1, 3.23]]
***
==============


********** THIS SETTING IS GOOD **********
[[6.9000e-01 6.4000e-01 1.0900e+00 1.2800e+00 2.4311e+05 1.0100e+01]
 [6.6000e-01 7.1000e-01 1.1500e+00 6.7000e-01 1.8835e+05 8.5900e+00]
 [2.8400e+00 2.9500e+00 3.3500e+00 4.8300e+00 3.0359e+05 8.1500e+00]
 [6.4700e+00 6.5600e+00 6.7600e+00 8.8100e+00 5.7988e+05 9.7000e+00]]
```