```
Last login: Fri Apr 10 13:05:51 on ttys000
Run-Mac:~ mac$ cd ~/.ssh
Run-Mac:.ssh mac$ ssh -i "Runzhe.pem" ubuntu@ec2-18-208-204-26.compute-1.amazonaws.com
The authenticity of host 'ec2-18-208-204-26.compute-1.amazonaws.com (18.208.204.26)' can't be established.
ECDSA key fingerprint is SHA256:1YgeH48SB8lAc24NSJ5PTwVcA1G5W3X0xqyxh7guhck.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-18-208-204-26.compute-1.amazonaws.com,18.208.204.26' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1060-aws x86_64)

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

  System information as of Fri Apr 10 17:11:46 UTC 2020

  System load:  1.21               Processes:           227
  Usage of /:   28.2% of 30.96GB   Users logged in:     0
  Memory usage: 1%                 IP address for ens5: 172.31.2.198
  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

89 packages can be updated.
38 updates are security updates.


Last login: Fri Apr  3 19:45:17 2020 from 107.13.161.147
ubuntu@ip-172-31-2-198:~$ export openblas_num_threads=1; export OMP_NUM_THREADS=1; python EC2.py
13:13, 04/10; num of cores:16sd_u_0_10

Basic setting:[rep_times, sd_O, sd_D, sd_u_O, w_O, w_A, u_O_u_D, sd_R_range, t_func] = [16, None, None, 10, 0.5, 1, 0, [0, 10, 20], None
]


--------------------------------------
[pattern_seed, day, sd_R] = [2, 7, 0]

max(u_O) =  122.9
O_threshold = 90
number of reward locations:  20
O_threshold = 100
number of reward locations:  9
O_threshold = 110
number of reward locations:  3
target 1 in 3 DONE!
target 2 in 3 DONE!
target 3 in 3 DONE!

--------------------------------------
Value of Behaviour policy:67.182
O_threshold = 90
MC for this TARGET:[76.906, 0.089]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[1.42, 1.23, 0.66]][[2.42, -76.91, -9.72]]
std:[[0.69, 0.69, 0.34]][[0.32, 0.0, 0.24]]
MSE:[[1.58, 1.41, 0.74]][[2.44, 76.91, 9.72]]
MSE(-DR):[[0.0, -0.17, -0.84]][[0.86, 75.33, 8.14]]
**
==============
O_threshold = 100
MC for this TARGET:[70.073, 0.074]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[-0.37, -0.41, -0.98]][[-0.96, -70.07, -2.89]]
std:[[0.49, 0.48, 0.37]][[0.3, 0.0, 0.24]]
MSE:[[0.61, 0.63, 1.05]][[1.01, 70.07, 2.9]]
MSE(-DR):[[0.0, 0.02, 0.44]][[0.4, 69.46, 2.29]]
***
==============
O_threshold = 110
MC for this TARGET:[72.699, 0.076]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[-5.65, -5.64, -5.77]][[-9.93, -72.7, -5.52]]
std:[[0.75, 0.79, 0.32]][[0.27, 0.0, 0.24]]
MSE:[[5.7, 5.7, 5.78]][[9.93, 72.7, 5.53]]
MSE(-DR):[[0.0, 0.0, 0.08]][[4.23, 67.0, -0.17]]
***
==============
```

```
[[ 1.58  1.41  0.74  2.44 76.91  9.72]
 [ 0.61  0.63  1.05  1.01 70.07  2.9 ]
 [ 5.7   5.7   5.78  9.93 72.7   5.53]]


time spent until now: 31.1 mins

13:44, 04/10

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

max(u_O) =  122.9
O_threshold = 90
number of reward locations:  20
O_threshold = 100
number of reward locations:  9
O_threshold = 110
number of reward locations:  3
target 1 in 3 DONE!
target 2 in 3 DONE!
target 3 in 3 DONE!

--------------------------------------
Value of Behaviour policy:67.167
O_threshold = 90
MC for this TARGET:[76.922, 0.147]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[1.31, 1.13, 0.65]][[2.45, -76.92, -9.75]]
std:[[0.83, 0.85, 0.52]][[0.37, 0.0, 0.19]]
MSE:[[1.55, 1.41, 0.83]][[2.48, 76.92, 9.75]]
MSE(-DR):[[0.0, -0.14, -0.72]][[0.93, 75.37, 8.2]]
**
==============
O_threshold = 100
MC for this TARGET:[70.089, 0.139]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[-0.26, -0.31, -0.97]][[-0.93, -70.09, -2.92]]
std:[[0.64, 0.63, 0.35]][[0.28, 0.0, 0.19]]
MSE:[[0.69, 0.7, 1.03]][[0.97, 70.09, 2.93]]
MSE(-DR):[[0.0, 0.01, 0.34]][[0.28, 69.4, 2.24]]
***
==============
O_threshold = 110
MC for this TARGET:[72.715, 0.131]
   [DR/QV/IS]; [DR_NO_MARL, DR_NO_MF, V_behav]
bias:[[-5.36, -5.37, -5.79]][[-9.93, -72.72, -5.55]]
std:[[0.93, 1.0, 0.38]][[0.28, 0.0, 0.19]]
MSE:[[5.44, 5.46, 5.8]][[9.93, 72.72, 5.55]]
MSE(-DR):[[0.0, 0.02, 0.36]][[4.49, 67.28, 0.11]]
***
==============
[[ 1.58  1.41  0.74  2.44 76.91  9.72]
 [ 0.61  0.63  1.05  1.01 70.07  2.9 ]
 [ 5.7   5.7   5.78  9.93 72.7   5.53]]


[[ 1.55  1.41  0.83  2.48 76.92  9.75]
 [ 0.69  0.7   1.03  0.97 70.09  2.93]
 [ 5.44  5.46  5.8   9.93 72.72  5.55]]


time spent until now: 62.1 mins

14:15, 04/10

--------------------------------------
[pattern_seed, day, sd_R] = [2, 7, 20]

max(u_O) =  122.9
O_threshold = 90
number of reward locations:  20
O_threshold = 100
number of reward locations:  9
O_threshold = 110
number of reward locations:  3
target 1 in 3 DONE!
target 2 in 3 DONE!
```