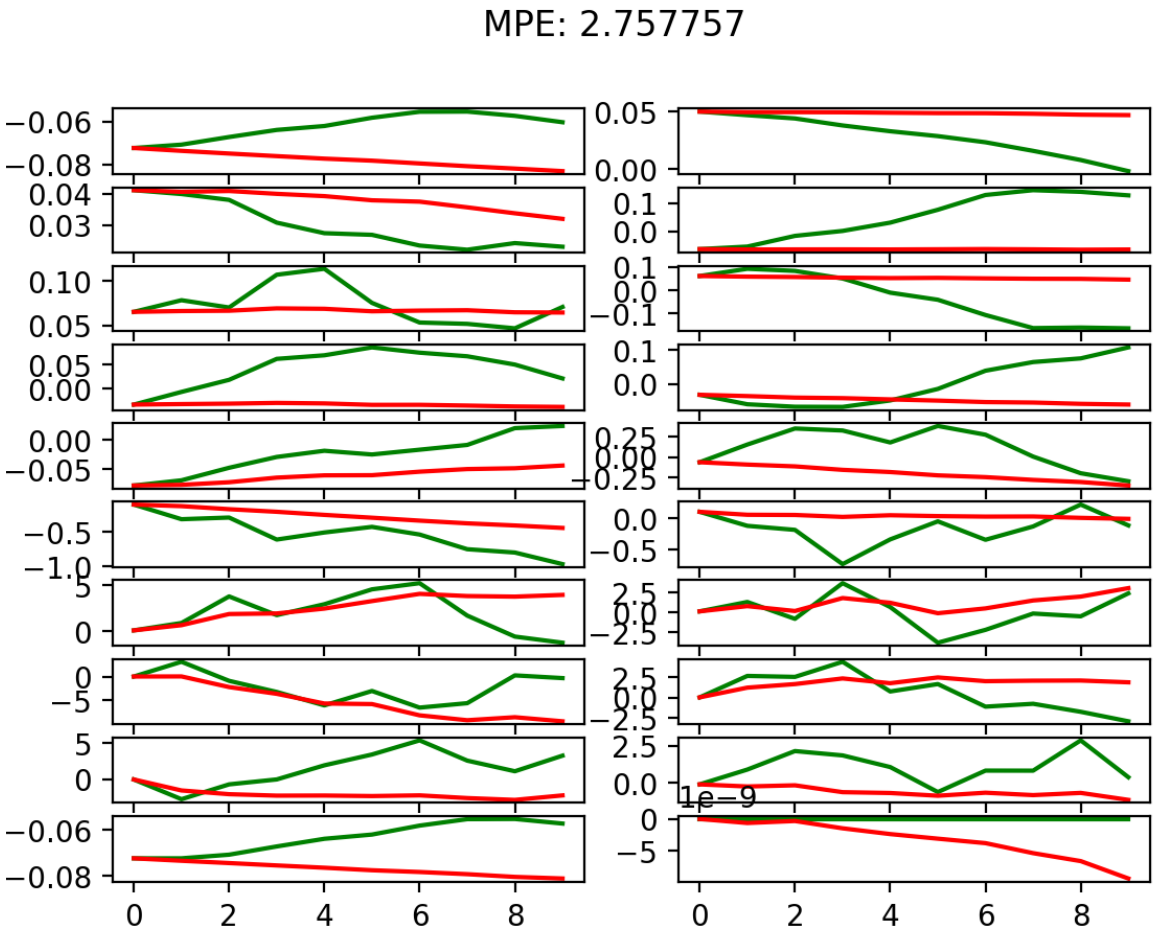
HW4

Problem 1

Structure 1:

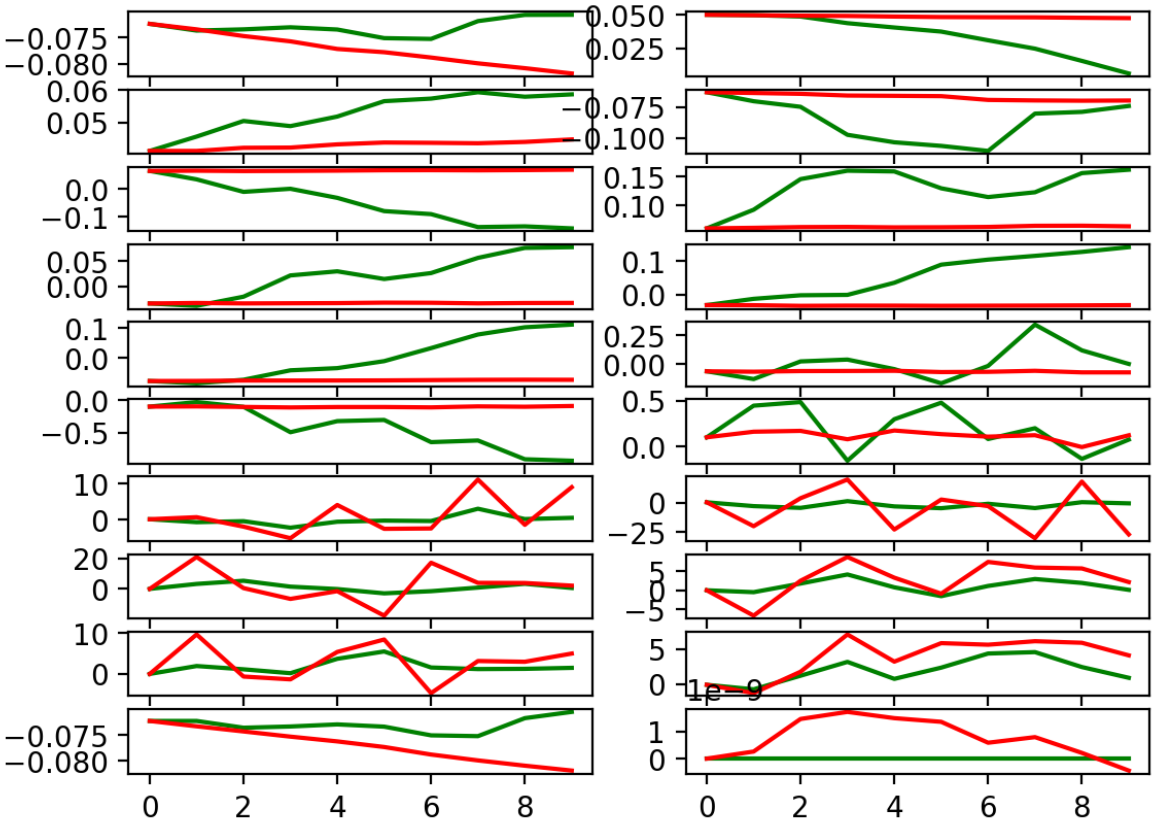
n=5, arch2×250



Structure 2:

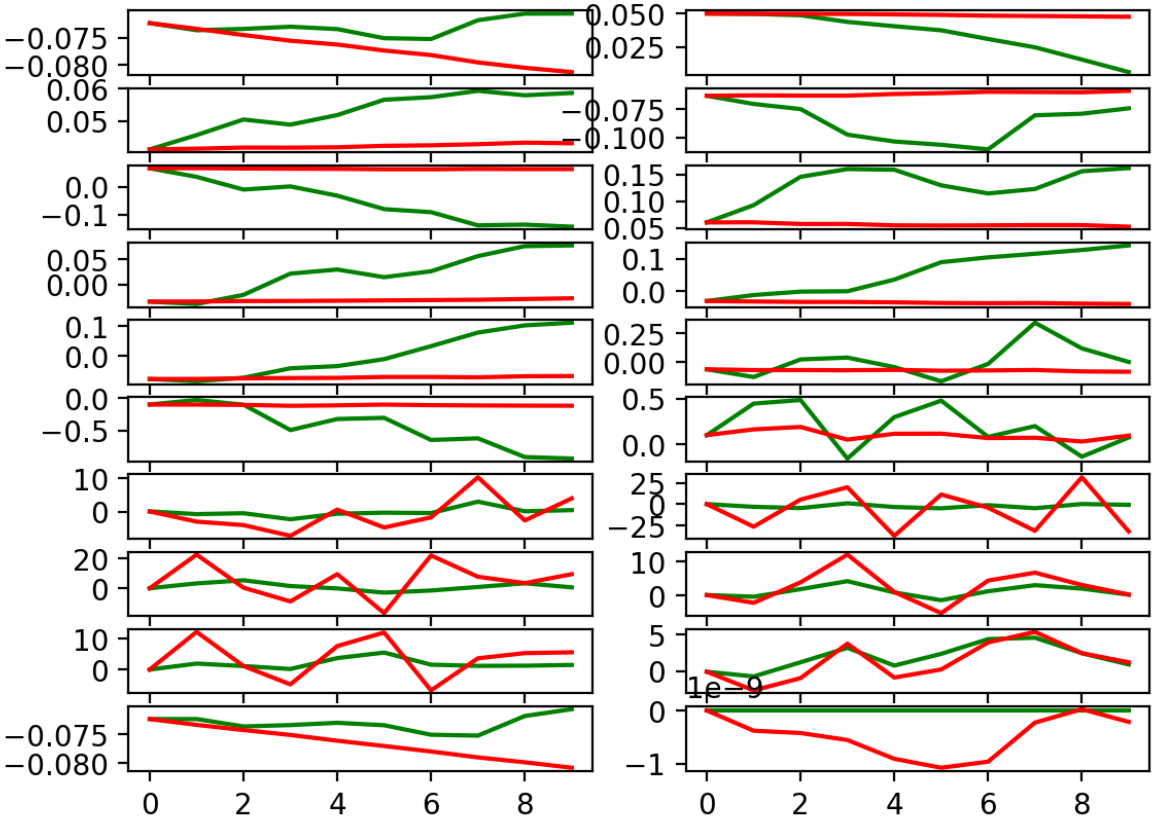
n=500, arch1×32

MPE: 20.073711



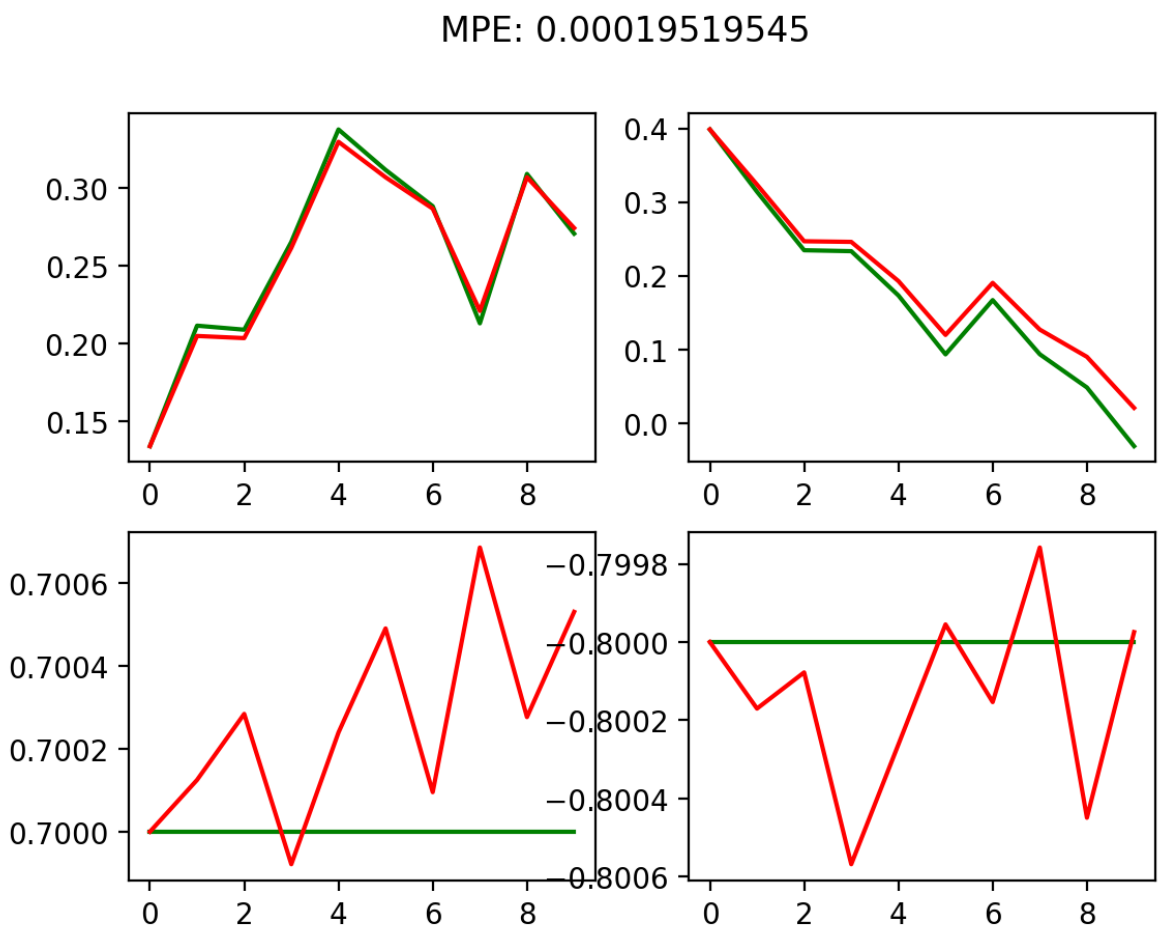
Structure 3:

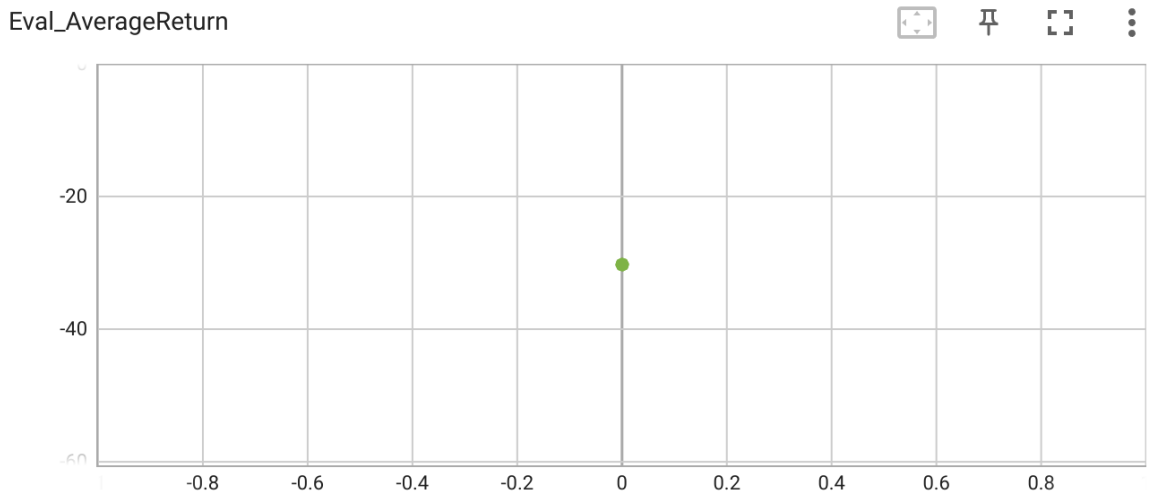
MPE: 33.878838



The first structure performs the best. It uses relatively smaller train steps and larger size and number of layers. It makes it less likely to be overfitting. Larger size somehow guarantees the size of features so that it can describe the true features better.

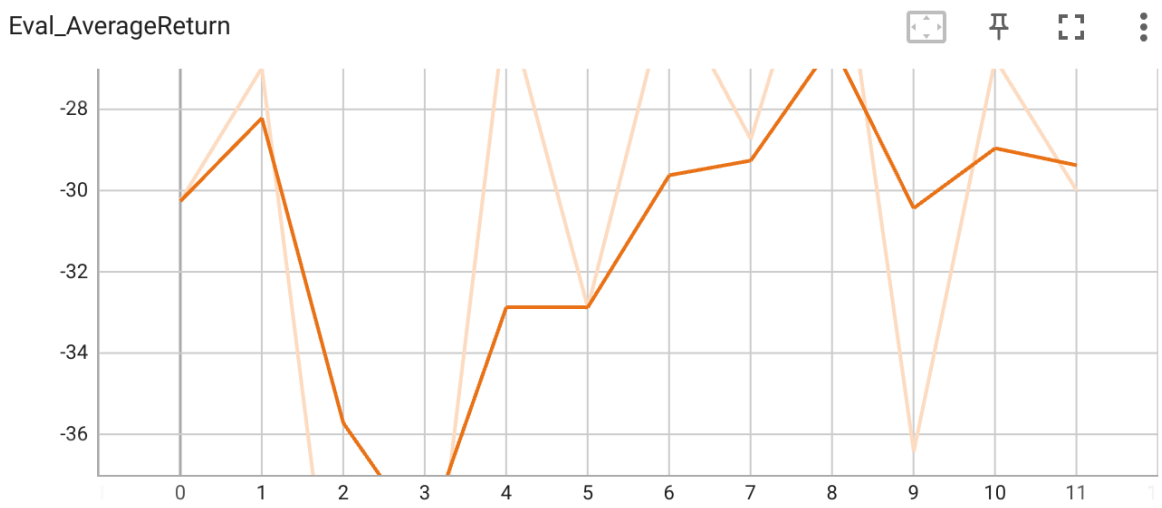
Problem 2



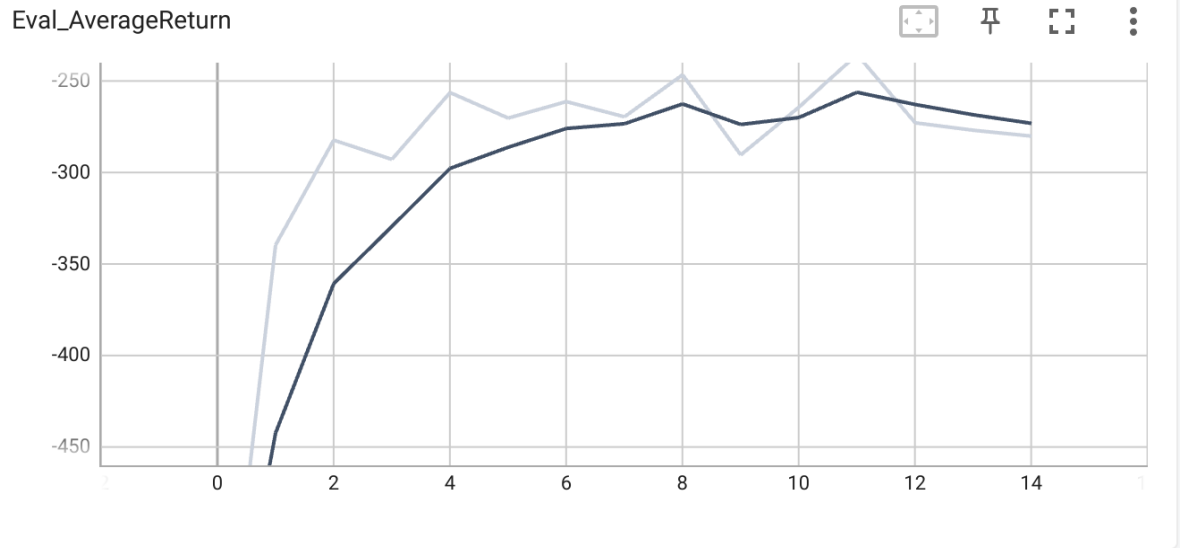


Problem 3

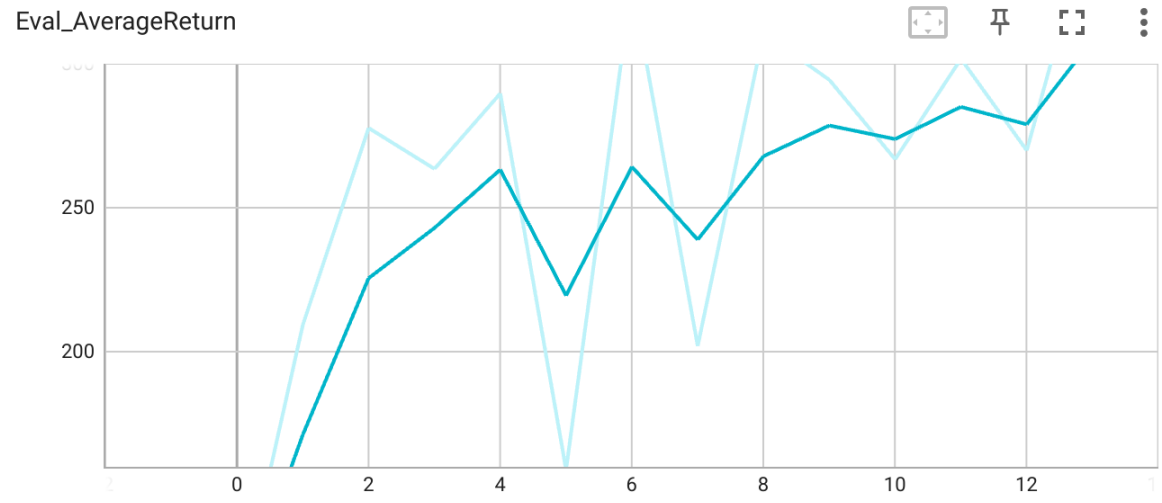
Obstacles:



Reacher

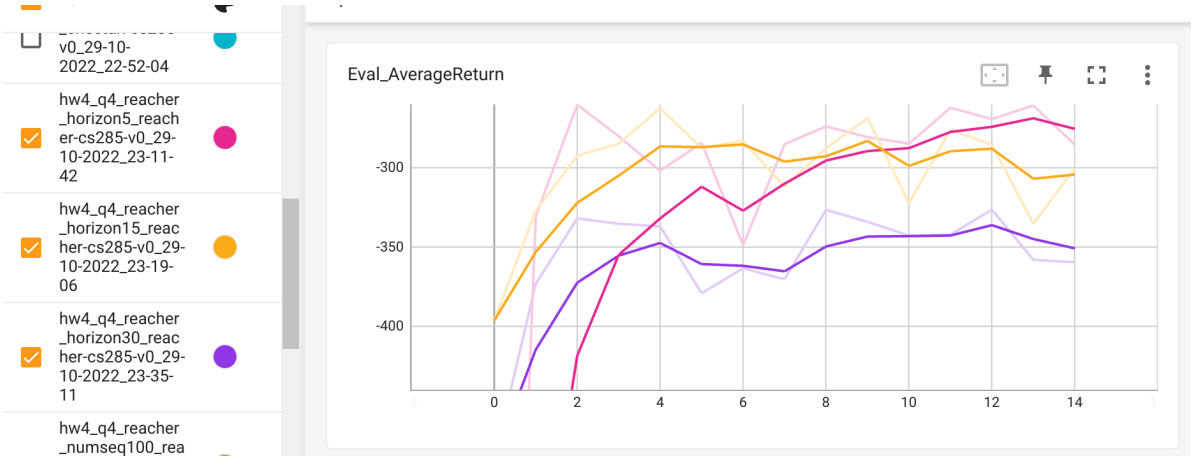


Cheetah



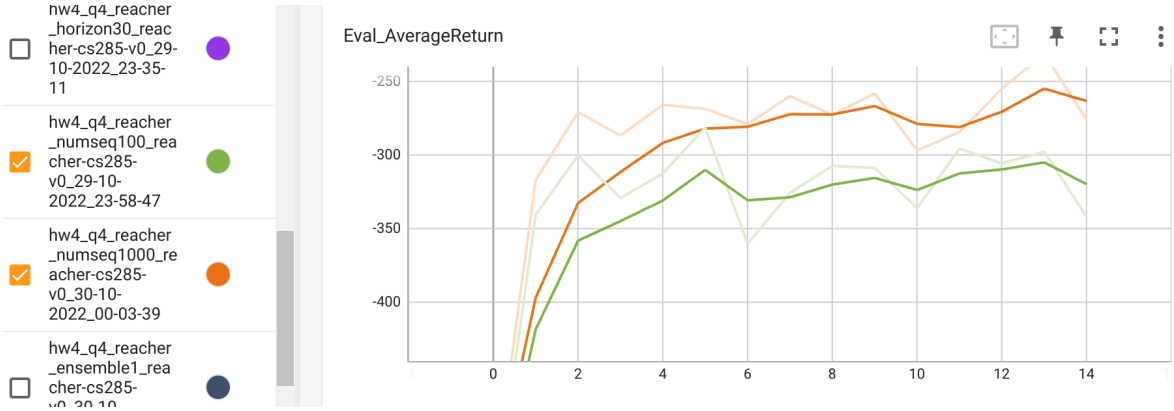
Problem 4

Different horizons:



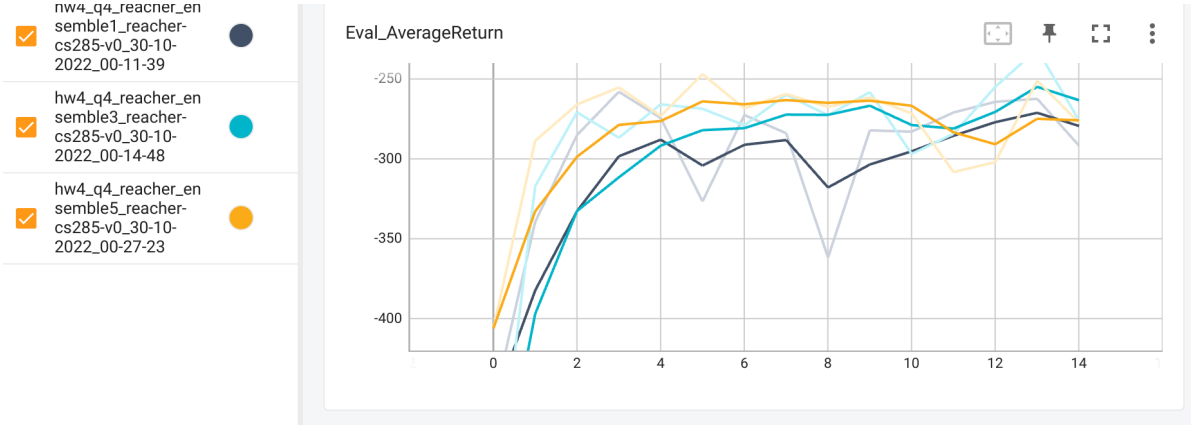
Lower horizon better

Different numseqs:



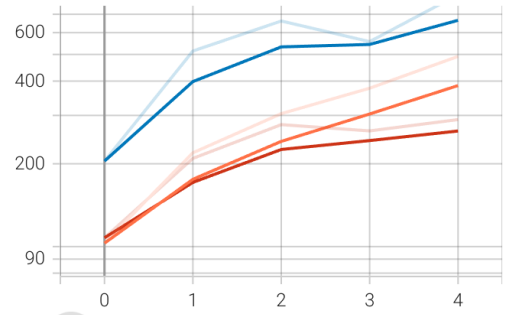
Higher numseq better

Different ensembles:



ensemble=3 better at last

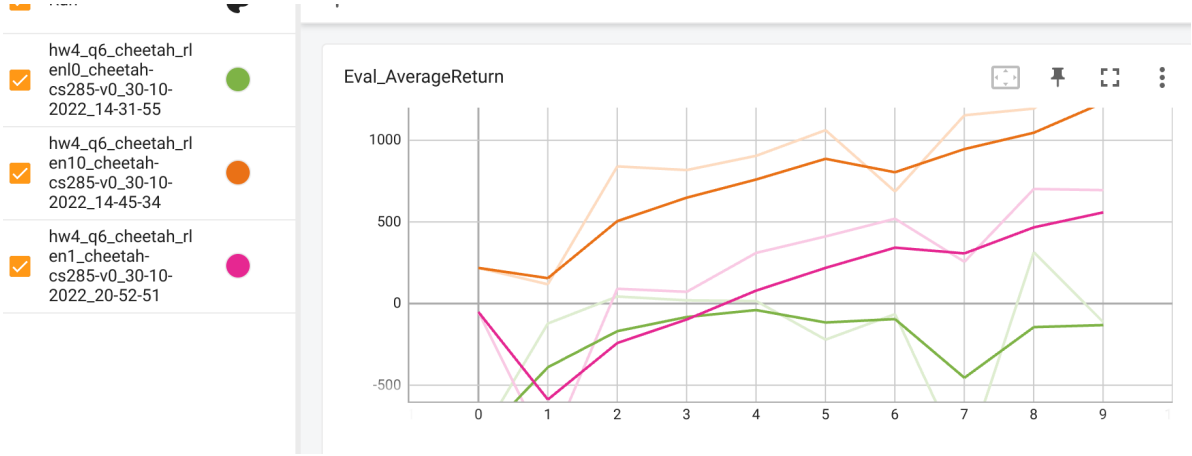
Problem 5



Name	Smoothed	Value	Step	Time	Relativ
hw4_q5_cheetah_cem_2_cheetah-cs285-v0_30-10-2022_15-06-38	102.9	102.9	0	Sun Oct 30, 15:07:30	0s
hw4_q5_cheetah_cem_4_cheetah-cs285-v0_30-10-2022_15-07-48	204.6	204.6	0	Sun Oct 30, 15:09:35	0s
hw4_q5_cheetah_random_cheetah-cs285-v0_30-10-2022_00-15-40	107.6	107.6	0	Sun Oct 30, 00:16:16	0s

Performance: cem4 > cem2 > random

Problem 6



The one with rollout=10 performs the best.

Hence, larger rollout will lead to better performance.