CS 285 Homework 1

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1 Behavioral Cloning

2.

Task	Ant	Hopper
Agent Performance Relative to Expert	86.7%	24.3%
`Eval_AverageReturn`	4085.02	917.34
`Eval_StdReturn`	479.28	186.06
`Train_AverageReturn`	4713.65	3772.67

Table 1: Behavioral cloning return statistics for Ant and Hopper tasks (`eval_batch_size`: 5000, `ep_len`: 1000, `n_iter`: 1, `n_layers`: 2).

3.

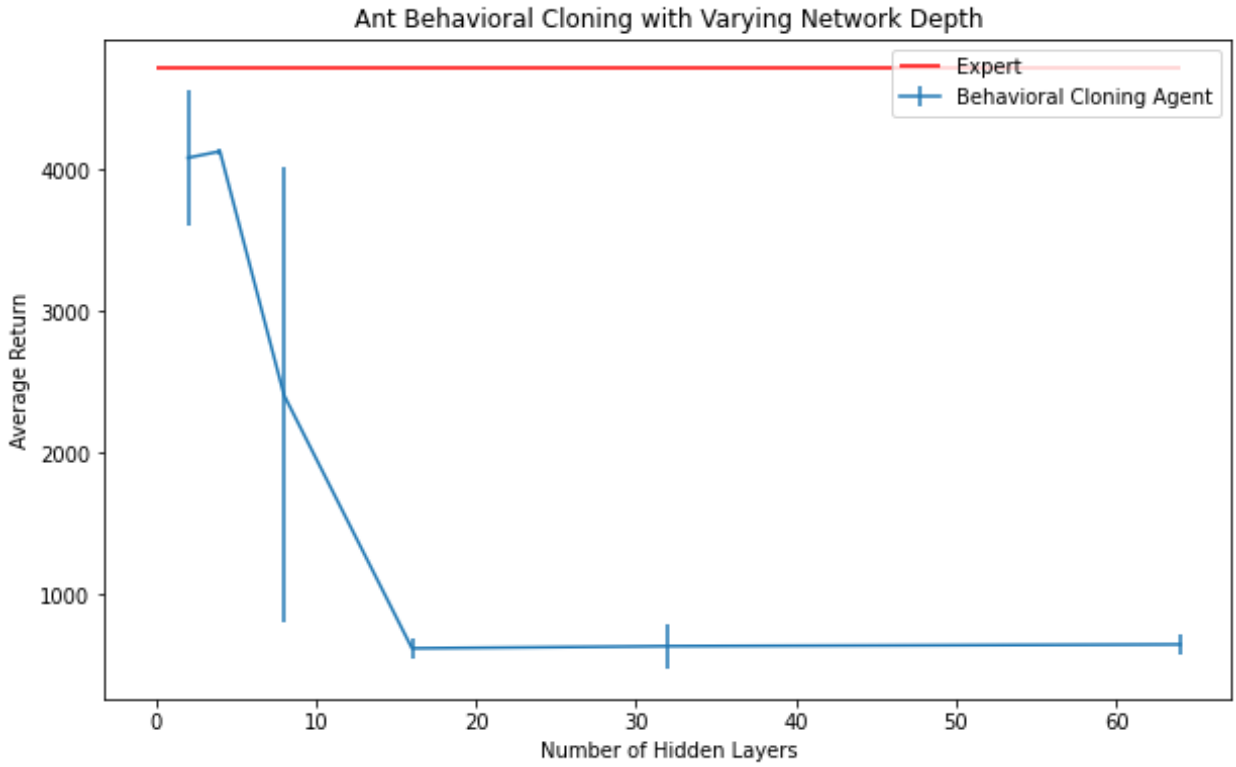
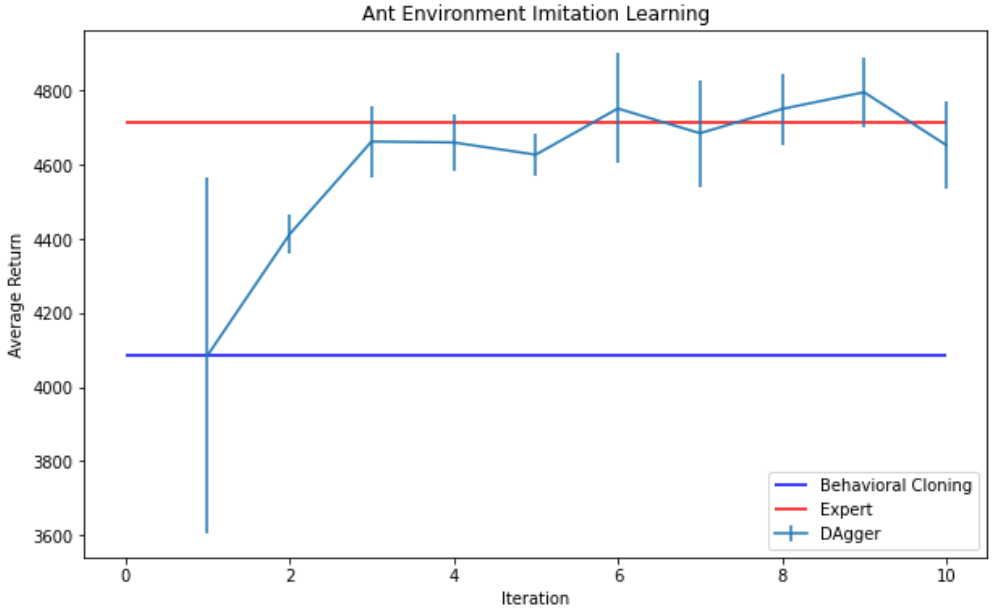


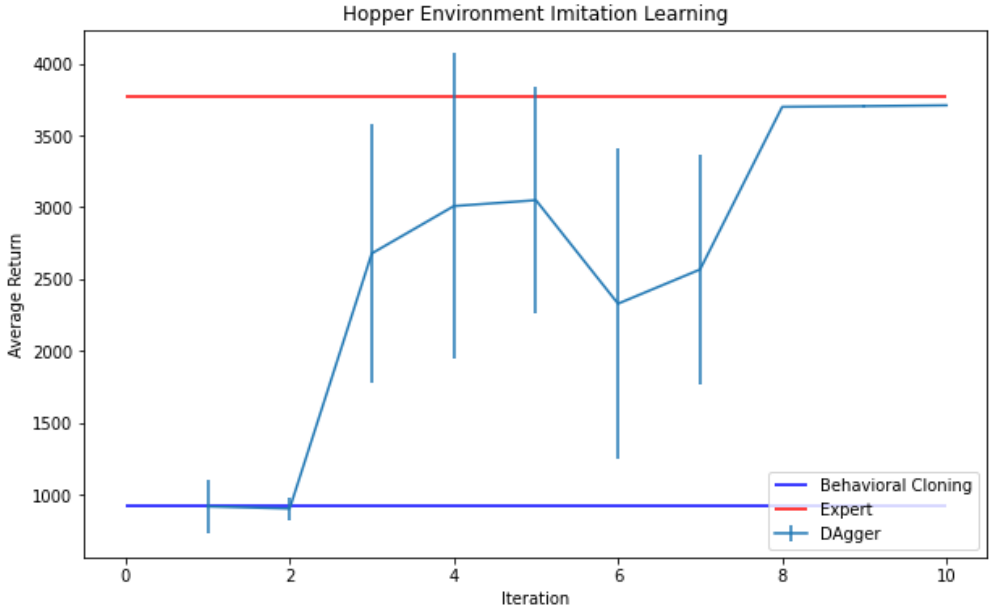
Figure 1: Behavioral cloning in Ant environment with varying network depth (number of hidden layers). Hyperparameter chosen to reinforce knowledge that excessive depth leads to poor performance due to the need to have more training data and/or overfitting. (`eval_batch_size`: 5000, `ep_len`: 1000, `n_iter`: 1, `n_layers`: [2,4,8,16,32,64])

2 Regression

2.



(a)



(b) Behavioral cloning with DAgger learning curves for Ant and Hopper tasks (`eval_batch_size`: 5000, `ep_len`: 1000, `n_iter`: 10, `n_layers`: 2)

Figure 2