LAB

Task

Main part of our assignemnt was to implement a behavioral cloning agent and evaluate its performance. We had to collect training data, create a model, then train it and test it in OpenAI Gym benchmark suite.

Architecture of the network

Layer	Filter size	Number of filters	Activation function	Use pooling
Convolutional layer	3	16	ReLU	yes
Convolutional layer	3	32	ReLU	yes
Convolutional layer	3	32	ReLU	yes
Convolutional layer	3	32	ReLU	yes
Flatten layer	-	-	-	-
Fully Connected layer	-	-	ReLU	-
Fully Connected layer	-	-	-	-
LSTM layer	-	-	-	-

Table 1: Parameters for each layer

Performance

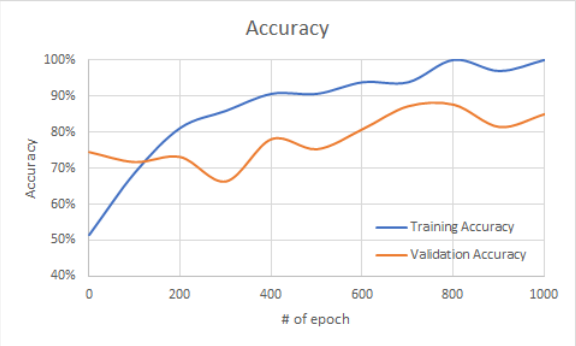

Figure 1: Learning curve

Comments

- It was really important to make training data useful. Most of the data was teaching our model not to do anything. That is why, I had to implement some kind of method to deal with that problem. I decided to assign probability of adding each

data sample to training set according to its distribution in player's actions. It solved problem, as in each mini batch was feeding the model with all actions.

- Another approach I tested was to translate idle action to accelerating with some probability, to make the car go faster.
- Unfortunately after today's work test-agent script stopped working for me, so I cannot record scores for the agent.
- I will try to fix that problem as soon as possible and push changes to the repository.