behavioralCloningProject

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1. Has an appropriate model architecture been employed for the task?

Ans. The initial model architecture used was LeNet Architecture. The car went off the track immediately after. Later Nvidia Architecture as discussed in the class was used and significant improvement was observed.

- Type of the model used: Deep Convolutional Neural Networks.
- Cropping Layer: (66,200,1) Some of the top part and bottom part of the images are trimmed.
- Lambda Layer: Data normalization layer.
- Convolution Layer:(66,200,1) Kernel_size=(5 x 5), Filters = 24, Activation=Relu, Strides = (2,2)
- Convolution Layer:() Kernel_size=(5 x 5), Filters = 36, Activation=Relu, Strides = (2,2)
- Convolution Layer: Kernel_size=(5 x 5), Filters = 48, Activation='Relu', Strides = (2,2)
- Convolution Layer: Kernel_size=(5 x 5), Filters = 64, Activation='Relu', Strides = (1,1)
- Convolution Layer: Kernel_size=(5 x 5), Filters = 64, Activation='Relu', Strides = (1,1)
- Dropout: 0.2
- Flatten
- Fully Connected: (8000 ,1164)
- Fully Connected: (1164 x 100)
- Fully Connected: (100 x 50)
- Fully Connected: (50 x 10)
- Fully Connected: (10 x 1)

2. Has an attempt been made to reduce over fitting of the model?

Ans. Dropout layer is used in the model architecture to reduce the over fitting.

3. Have the model parameters been tuned appropriately?

Ans. Adam Optimizer was used for training.

4. Is the training data chosen appropriately?

Ans. Yes, the training data was collected in 4 ways. Two laps of straight on the track driving. One lap of on the track driving on reverse track. One lap of recovery driving. One lap of driving in the curves.

5. Dataset creation:

Ans. The dataset iscreated using the simulator provided by the Udacity. Keyboard direction keys are used to collect the training data. Below are a few examples from the dataset collected.