ARPITA DUTTA **AXD170025**
NIKITA VISPUTE **NXV170005**
CS 6301.004

ASSIGNMENT 4

REPORT

DATA SET:

The Imagenet Website Server has been under maintenance since a long time, hence we were unable to download the data set from there. Instead we downloaded the dogs and cats data set from the following Kaggle website link: https://www.kaggle.com/c/dogs-vs-cats/data

Of this we have used only the train dataset because we required the class labels as well. Hence, we have split the train data set folder from the Kaggle website into the train and test folders for the Assignment and uploaded the zipped folder of the same to the UTD website.

Total data set images = 12500 (dogs) + 12500 (cats) = 25000

Train data set images = 10000 (dogs) + 10000 (cats) = 20000 (80 %)

Test data set images = 2500 (dogs) + 2500 (cats) = 5000 (20 %)

CLASSIFICATION:

Cat: 0

Dog: 1

PREDICTED LABEL AND TRUE LABEL

In the runs folder, output tab of the view.html page shows 25 samples from the test data with their true label and the predicted label.

Since there are two classes , it is binary classification and so 0 is assigned for cats and 1 is assigned for dogs.

The Images are in integer array form and hence only the true label and predicted label of 25 test samples is displayed.

PARAMETER TESTING AND TUNING:

ITERATION	PARAMETERS	TRAINING AND TEST ACCURACY
1.	1. No of layers = • 4 conv 2D layers • 4 max pooling layers • After flattening, 2 dense layers 2. Kernel size = 3 * 3 3. No of kernels in each layer = • Conv 2D layer 1 : 32 • Conv 2D layer 2 : 64 • Conv 2D layer 3 : 128 • Conv 2D layer 4 : 128 4. No of neurons in the last dense layer = 1 5. Activation function = All layers except last: RELU Last layer : sigmoid 6. Error function = binary cross entropy 7. Batch size = 25 8. No of epochs =30 9. Steps per epoch = 100	Training Accuracy: 0.8344 83.44% Test Accuracy: 0.7864 78.64%
2.	1. No of layers = • 3 conv 2D layers • 3 max pooling layers • After flattening, 1 dense layer 2. Kernel size = 2 * 2 3. No of kernels in each layer = • Conv 2D layer 1 : 32 • Conv 2D layer 2 : 64 • Conv 2D layer 3 : 64 4. No of neurons in the last dense layer = 1 5. Activation function = All layers except last: RELU Last layer : sigmoid 6. Error function = binary cross entropy 7. Batch size = 25 8. No of epochs = 30 9. Steps per epoch = 100	Training Accuracy: 0.7841 78.41% Test Accuracy: 0.6692 66.92