19th March Update

1. Trained the DenseDepth model with the following specs: epoch=15, batch_size=4, lr=0.0001, no of training images=5000 from NYUv2 dataset

   This was done to replace the previous checkpoint model (nyu_e10.h5) with a checkpoint with above mentioned specs(nyu_5000_e15.h5) to check the change in error metrics after inference. The script for the training is present in the google colab sheet shared in previous update

2. Tried running inference over 4 images with the new model on my local PC. Initially I encountered the following error: **RuntimeError: CUDA out of memory.** when I tried to run the inference using batch_size of 4.

   This was apparently because of not using *model.eval()* and *torch.no_grad()* each of which has a role in decreasing the memory used in GPU by reducing gradient computation during inference and more importantly decreasing the inference time by a small margin. A good read regarding the above mentioned: https://stackoverflow.com/questions/55627780/evaluating-pytorch-models-with-torch-no-grad-vs-model-eval

   The inference time over 1 iteration (300 convolutions) in case of **decoder.conv2** layer has now improved from 13-14s to ~12.5s on an average.

```
time_taken for 300 conv in 1034 / 1104 = 12.402008533477783
time_taken for 300 conv in 1035 / 1104 = 12.399555444717407
time_taken for 300 conv in 1036 / 1104 = 12.385776281356812
time_taken for 300 conv in 1037 / 1104 = 12.381368160247803
time_taken for 300 conv in 1038 / 1104 = 12.371005058288574
time_taken for 300 conv in 1039 / 1104 = 12.351617574691772
time_taken for 300 conv in 1040 / 1104 = 12.293586730957031
time_taken for 300 conv in 1041 / 1104 = 12.462618589401245
time_taken for 300 conv in 1042 / 1104 = 12.36318063735962
time_taken for 300 conv in 1043 / 1104 = 12.401844263076782
time_taken for 300 conv in 1044 / 1104 = 12.350620746612549
time_taken for 300 conv in 1045 / 1104 = 12.37288761138916
time_taken for 300 conv in 1046 / 1104 = 12.370953798294067
time_taken for 300 conv in 1047 / 1104 = 12.401986360549927
```

Fig: Average time taken for 1 iteration ~12.5 seconds

3. I have given a run over 4 test images, with batch size of 4. The run will take ~20 hrs to complete. I will keep you posted with updates regarding the same.