Honors Report
Unsupervised Recurrent Attention Model

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How to run the code

- For training the unsupervised recurrent attention model
  - python3 main.py
- For seeing the glimpses
  - python3 plot_glimpses.py --plot_dir=PATH_TO_THE_PLOT_DIR --epoch=EPOCH_NUMBER
  - eg. : " python3 plot_glimpses.py --plot_dir=./ram_9_6x6_2/ --epoch=1 "
  - Here the data while training is saved for each epoch in the plot/ directory with model name as : ram_NO_OF_GLIPMSES_SIZE*SIZE_SCALE.
  - Here different different data is saved for each epoch like locations as l_EPOCH_NO, glimpses data as gp_EPOCH_NO, formed images, and original images.
  - To see the results we can parallelly see the output by running the above command after that particular epoch is done.
- For testing
  - python3 main.py --is_train=false --model_epoch=PRETRAINED_SAVED_MODEL_EPOCH_NO
  - eg.: python3 main.py --is_train=false --model_epoch=9

- **Note : If the data download fails for some reason (it won't but happens with me once) add the cifar-10-python.tar.gz in the data directory.**

Sample results

- Of plot_glimpses.py
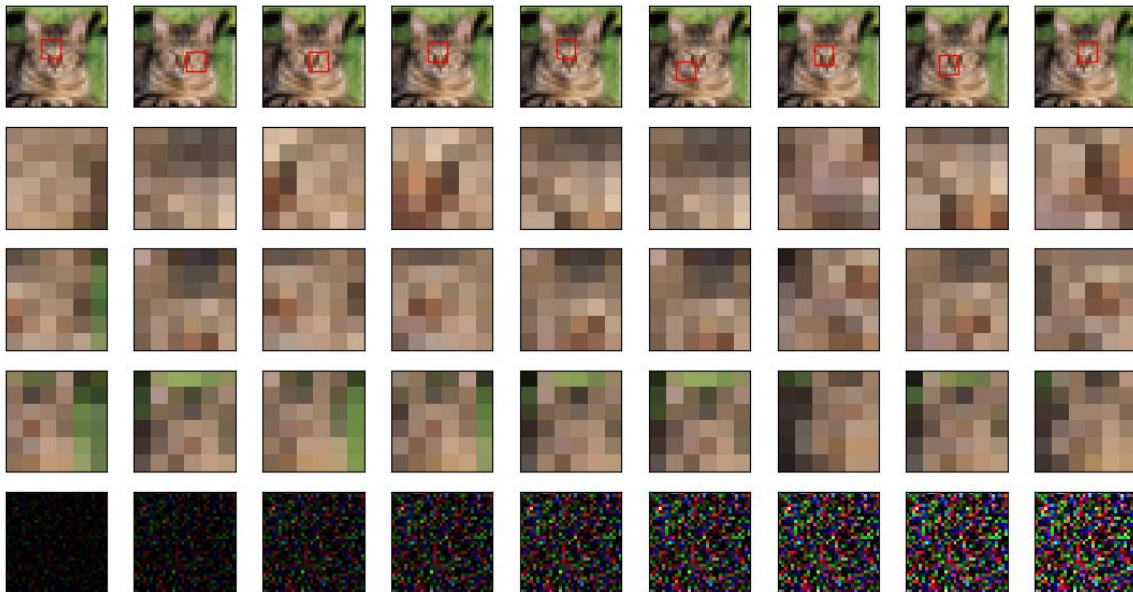
- Here in the first row it shows the bounding box of size*size (here in this case it is 6*6) at the location where it is looking.
- In the second row it shows the extracted patch of size*size (here 6*6)
- In third row it is a scaled down version of (scale*size)*(scale*size) patch centered at the locations of the glimpse to size*size patch (here scale = 2 so 12*12 patch to 6*6 patch)
- In fourth row it is a scaled down version of (scale^2*size)*(scale^2*size) patch centered at the locations of the glimpse to size*size patch (here scale = 2 so 24*24 patch to 6*6 patch)
- Last row is the cumulative sum of predicted image at each at each glimpse. (**Note: This output result is the output of the 1st epoch hence very noisy results of the predicted image**)

Another example for different data (horse image)