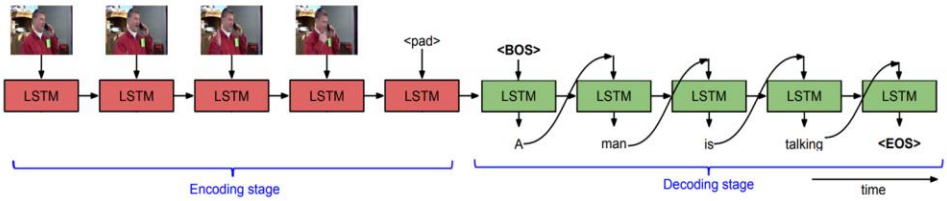
HW2 Report

1. Files included in submission

- Trained model. Since they are larger than 100MB, please use this link https://drive.google.com/open?id=1hR0cy1zp23hsDX7EA1YRfY2x2gUPFQz3 to download them seperately and copy to hw2/hw2_1

- Source code to generate trained model.

Configuration:



Model: the model I built is exactly the same as the figure shown above, only Tensorflow was used, no Keras.
Encoder LSTM dimension: 512
Decoder LSTM dimension: 512
Epochs: 20
Batch size: 256
Learning rate: AdamOptimizer default
Training set: all captions are used

- Text encoding table (translate word to integer)

This file can indicate that only training data is used to train my model since the total number of unique words are different between training and testing data. This can be verified by printing the entire dictionary.

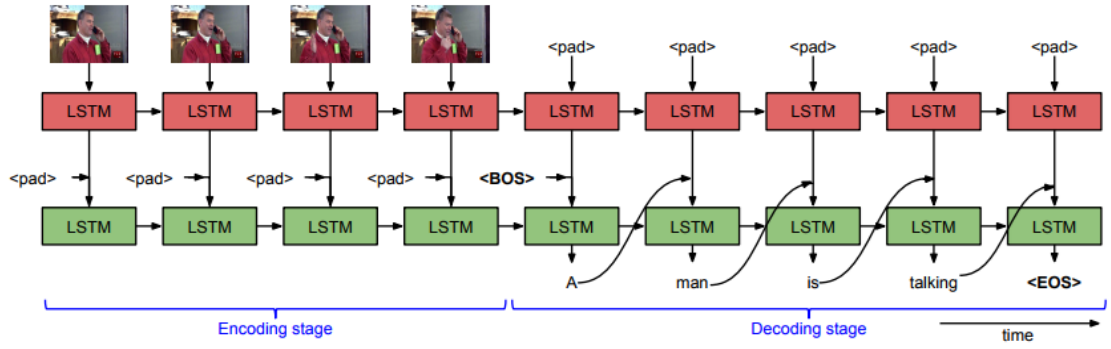
- Shell file to generate predicted captions that will be used to compute score

2. Follow the steps down below to compute bleu score. I put the testing data in the directory MLDS_hw2_1_data/testing_data (assume that you are already in the directory of hw2/hw2_1). So before following the steps, please copy testing data to the submission folder.

```
[yitongd@node0143 HW2_M2]$ source activate tensorflow
(tensorflow) [yitongd@node0143 HW2_M2]$ chmod u+r+x hw2_seq2seq.sh
(tensorflow) [yitongd@node0143 HW2_M2]$ ./hw2_seq2seq.sh MLDS_hw2_1_data/testing_data output_new.txt
(tensorflow) [yitongd@node0143 HW2_M2]$ python bleu_eval.py output_new.txt
Average bleu score is 0.6123731944707025
```

3. Additional model trained

I also implemented the model in S2VT paper where both encoder and decoder share the same LSTMs. I didn't use it in my final submission as it gives me roughly the same bleu score as the base model. I included the source code and caption predicated by this model for testing data in "S2VT" folder. The result generated by this model is less repetitive than base model.



Encoder LSTM dimension: 256
Decoder LSTM dimension: 256
Epochs: 30
Batch size: 10
Learning rate: AdamOptimizer default
Training set: all captions are used