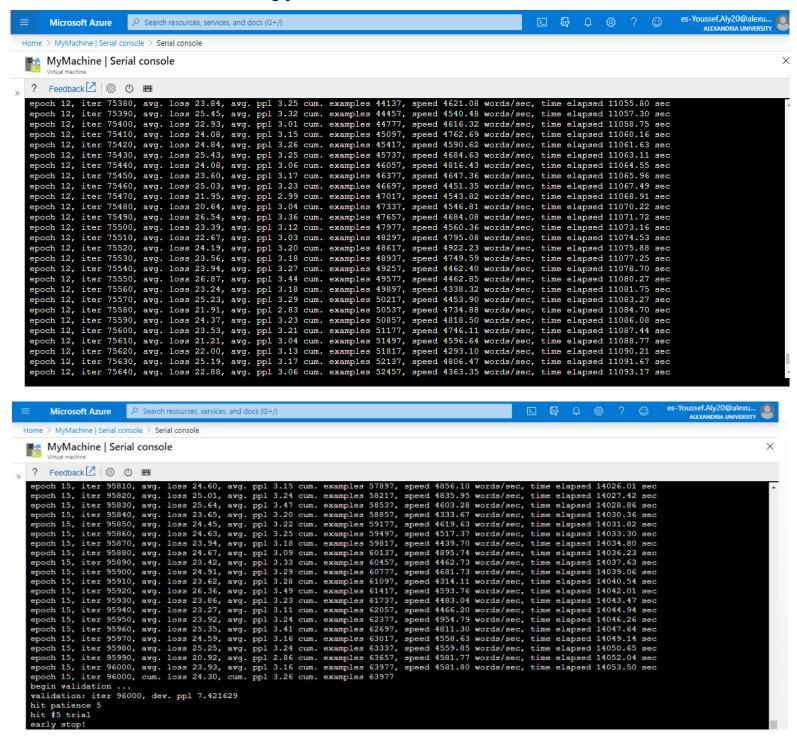
Youssef Kishk 3812

CS 224n: Assignment #4

1) Neural Machine Translation with RNNs

Screenshots from training process on Microsoft azure:



i) Bleu Score:

```
bin ./en_es_data/test.es ./en_es_data/test.en outputs/test_outputs.txt --cudael.b [nltk_data] Downloading package punkt to /home/ykishk/nltk_data... [nltk_data] Package punkt is already up-to-date! load test source sentences from [./en_es_data/test.es] load test target sentences from [./en_es_data/test.en] load model from model.bin Decoding: 100%| | 8064/8064 [06:19<00:00, 21.25it/s] Corpus BLEU: 36.004354648520106 [base) vkishk@MvMachine:~/a4$
```

j)

product attention	multiplicative attention	additive attention
Memory efficient	Efficient to compute	Slower to compute
and efficient in		
computation		

2) Analyzing NMT Systems

a)

i) Error: Here's another favorite

ii) Error: I'm probably the author for children,

iii) Error: Richard <unk>

Reason: Name Bolingbroke is not defined to the NMT system

Solution: Use character based embedding as input layer or copy unknown words from original text

v) **Error**: bathroom in the women's room.

Reason: I think there are some gender bias as the female context is translated as women not professor.

Solution: Use more data from different sources of collection

vi) Error: 100,000 acres.

Reason: Maybe because of lack of understanding of currency conversion

1:-0.5 iel,23]=0 iel3,43 the love can always do P = 0+7+1+1+0 = 3 $P_2 = \frac{0+1+1+0}{4} = \frac{1}{2} \left(\text{len(c)} = 5 \right) \text{len(r)} = 4$ Bleu c = BP* exp(1, log(P,)+ 1, log(P2)) * exp(1 log(1)+1 log(1))-0.77 ove can make any thing possible lec(c)=5, Len(r)shorts=5 | BP = 1 Bleuc = BP* exp(1, Log(P)+1, log(P)) Bleucz, > Bleuc, , & is considered better I agree, c, seems better det

