Basic architecture

NLP - Data to Model I/O Pipeline Ideas

by Jo Agila Bitanay, NIT Delhi + Harvard Alumni

Recap:
1. RNN, LSTM, Bi-directional
2. Bag of Words
3. Seq2Seq
4. Word2vec / Coding

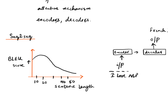
Topic: Transformer (V.V.V.Imp)

Self attention

attention mechanism

encoder, decoder.

Seq2Seq.



Attention : giving focus to important words

Seq2Seq.

1.

Application : Language Translation

2.

application. image captioning

3. Sequence to Vector

application

text to image.

Sentiment Analysis / Sentiment Mining

Say: The food is good →

4) CNN

Dog/cat

Seq2Seq

V.V.Imp

Above → CNN, VGG16, VGG19, Resnet, Resnet

RNN, LSTM, Bi-directional, Seq2Seq

text, say

Seq2Seq , RNN, LSTM

(attention)

$y = f(x_1 w_1 + x_2 w_2 + \cdots + x_n w_n + b)$

$(x_1 w_1 + x_2 w_2 + \cdots + x_n w_n + b)$

Attention

The animal didn't cross the street, it seems very tired

I was born in France ..., I can speak French fluently

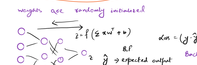
attention → giving focus

(Attention map)

Self-attention

I was born in France, I speak French fluently

weights are randomly initialized



$z = f(\sum x w^T + b)$

$loss = (y - \hat{y})^2$

BP

$\hat{y}$ → expected output

y → output

Back propagation

update weights

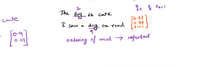
$w = w - \eta \frac{\partial L}{\partial w}$

$\frac{\partial L}{\partial w}$ → chain Rule

Input text Transformer

Figure 1: The Transformer - model architecture.

computer → Dog ×

Vector space

Embedding space