

# TRANSFORMERS

RNN, LSTM, CNN, Graph NN

NLP

GPT

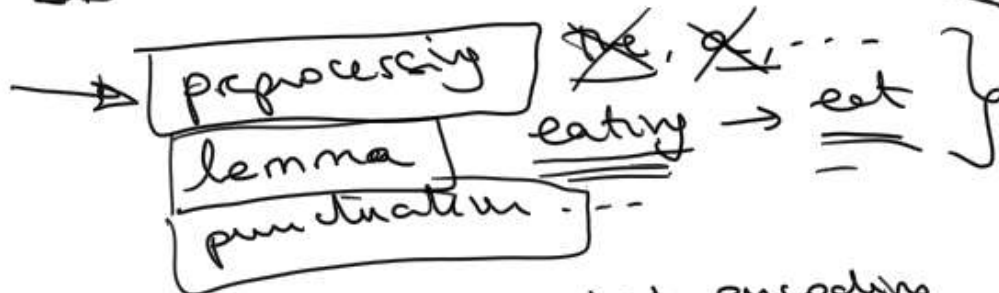
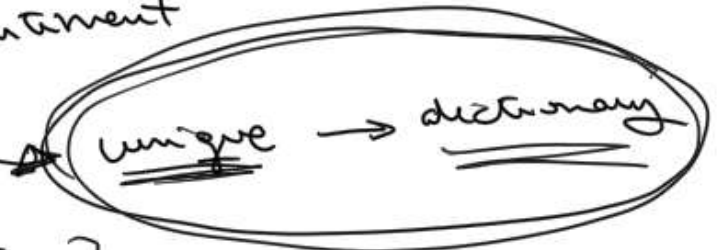
LLM

Gen. pre-trained Transformers

① Word embedding } Attention is all you need  
 ② Attention ←

Samples of text.

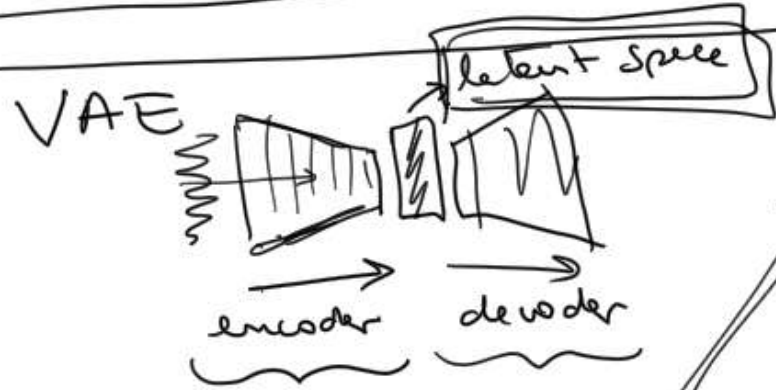
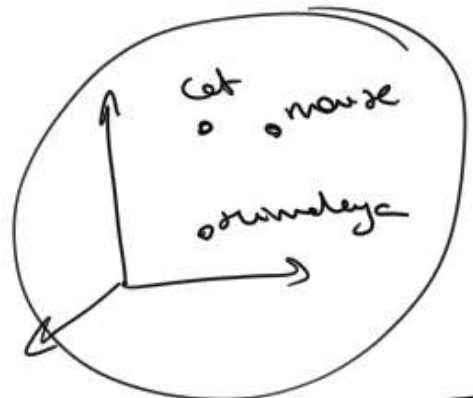
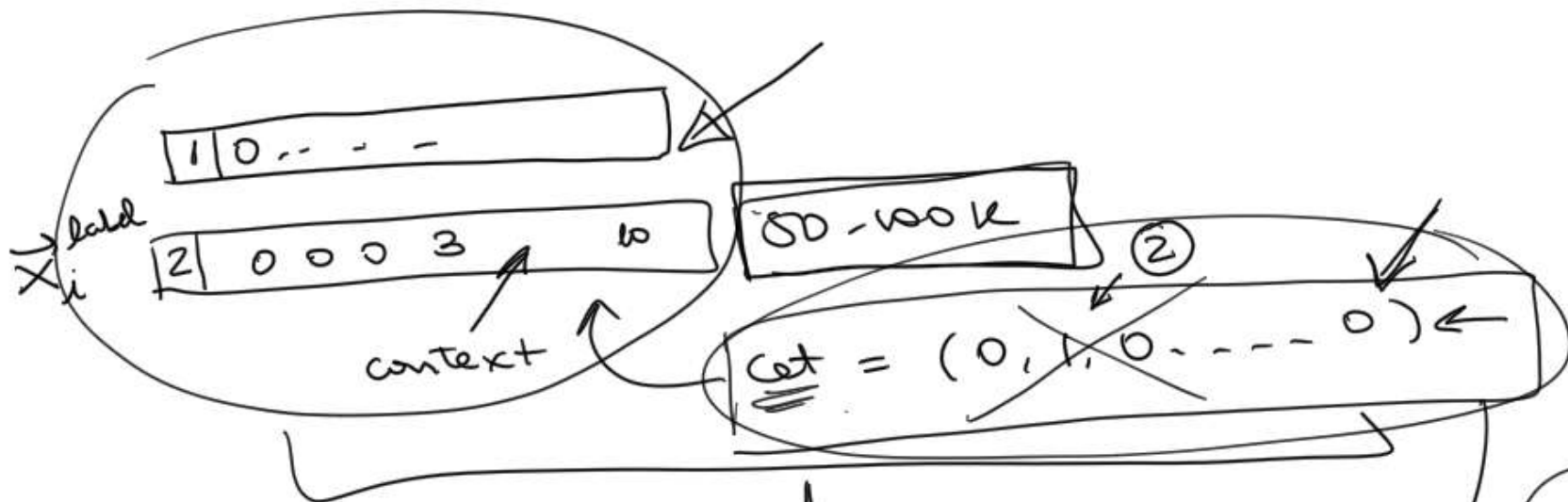
numerical  
value  
ID



~ 50-100k words  
corpus/corpora

- ① a bee
- ② eat - - -

one-hot encoding  
 bee = (1, 0, 0, ..., 0) 50k  
 eat = (0, 1, 0, ..., 0) word → vector

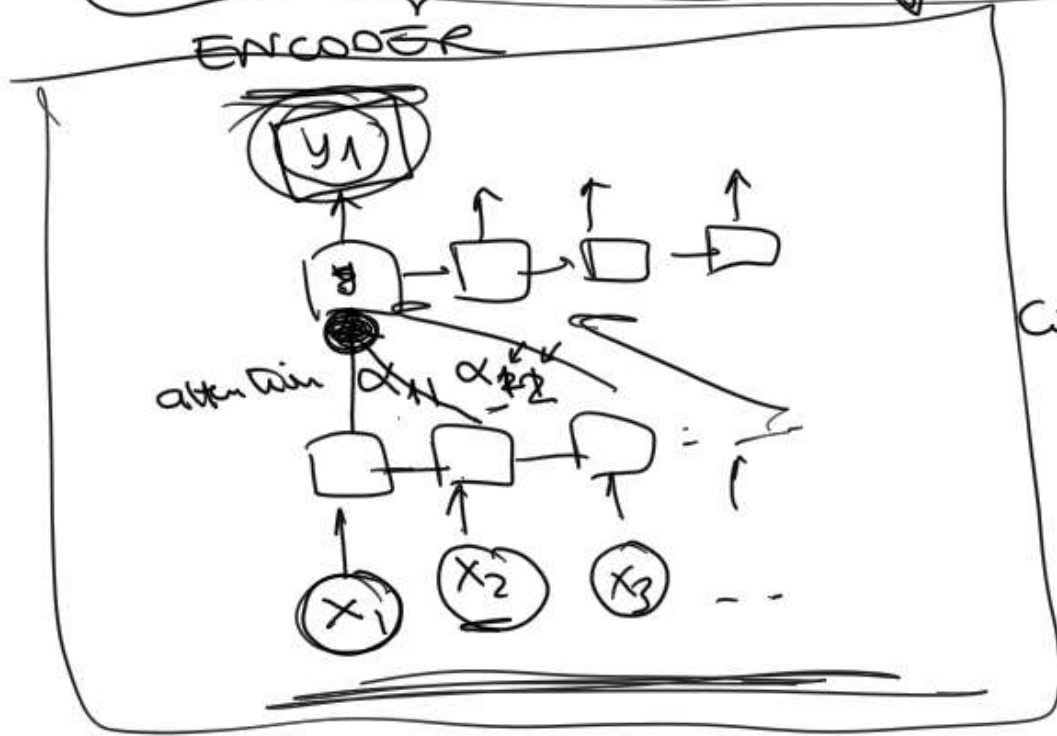
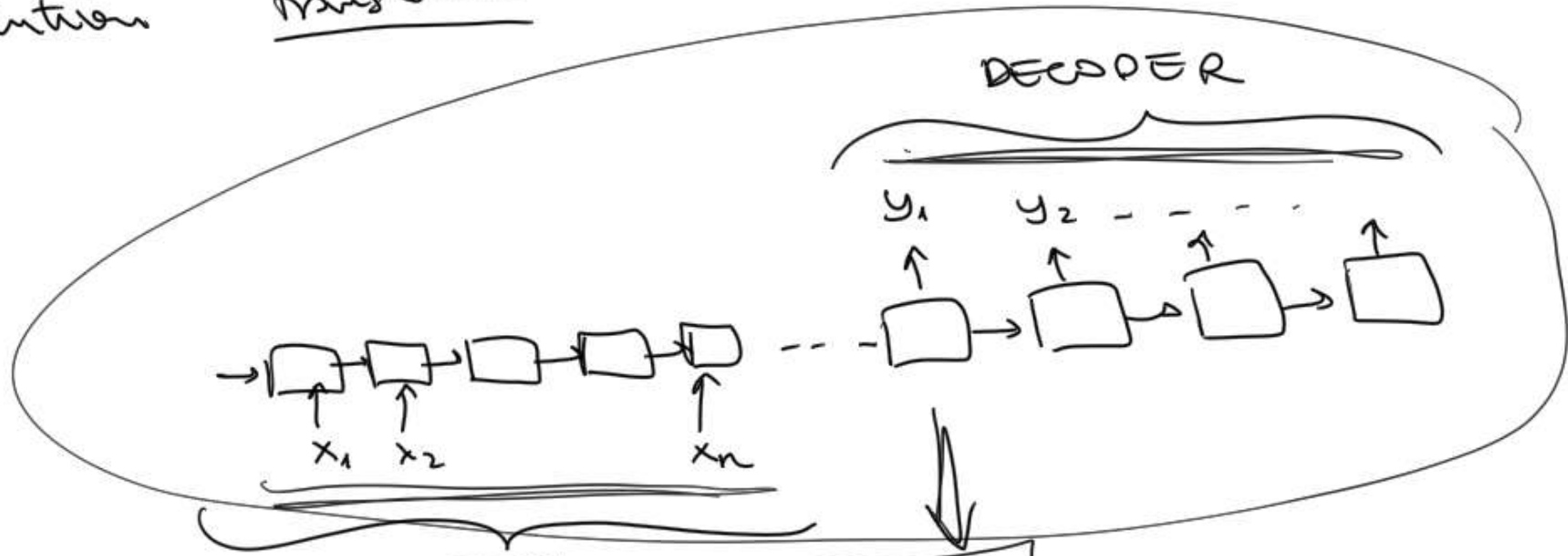


~~The black cat ate mouse~~  
 choose a window 4-5  
 (black, cat) (cat, ate)  
 (black, ate) (cat, mouse)  
 (black, mouse)

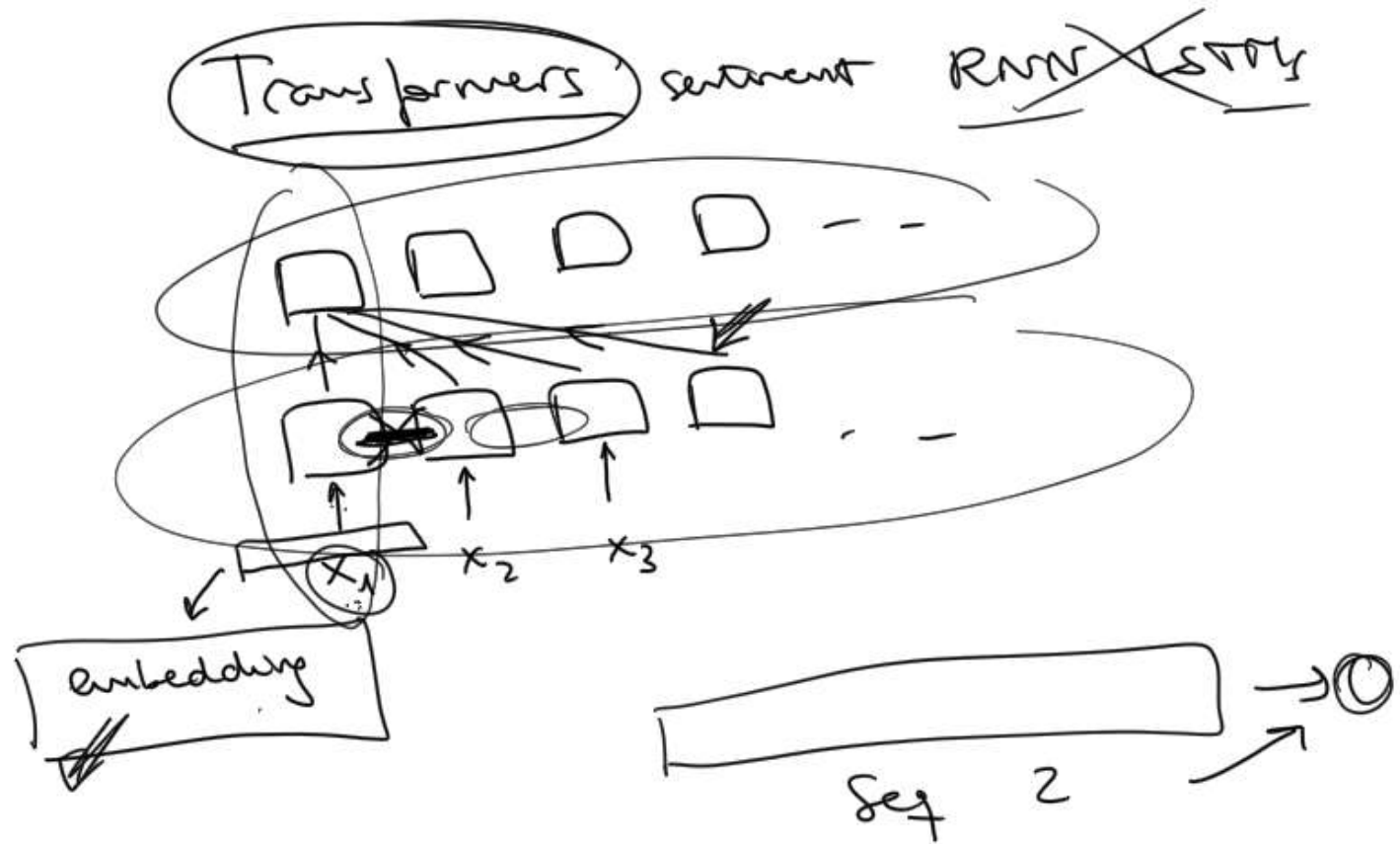


# Attention

## translation



2



≡ dictionary  
VADER

word → sent score

terrorist  
death

-1

happiness  
never

+1

0