

- ① GenAI
- ② LLM
- ③ Classical AI vs genAI
- ④ Different model
- ⑤ Chatgpt

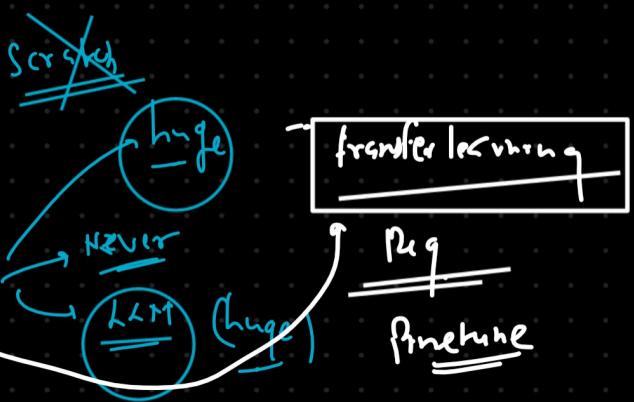
ML/DL Pipeline

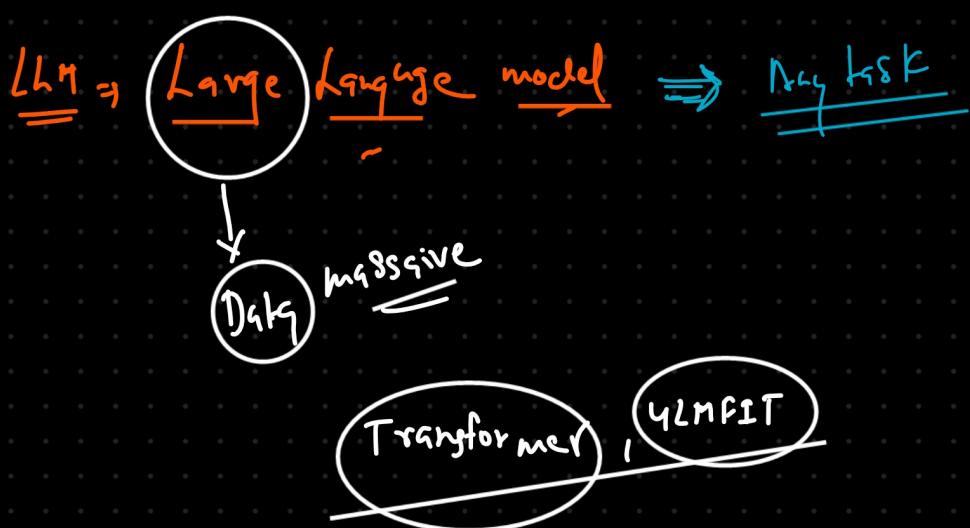
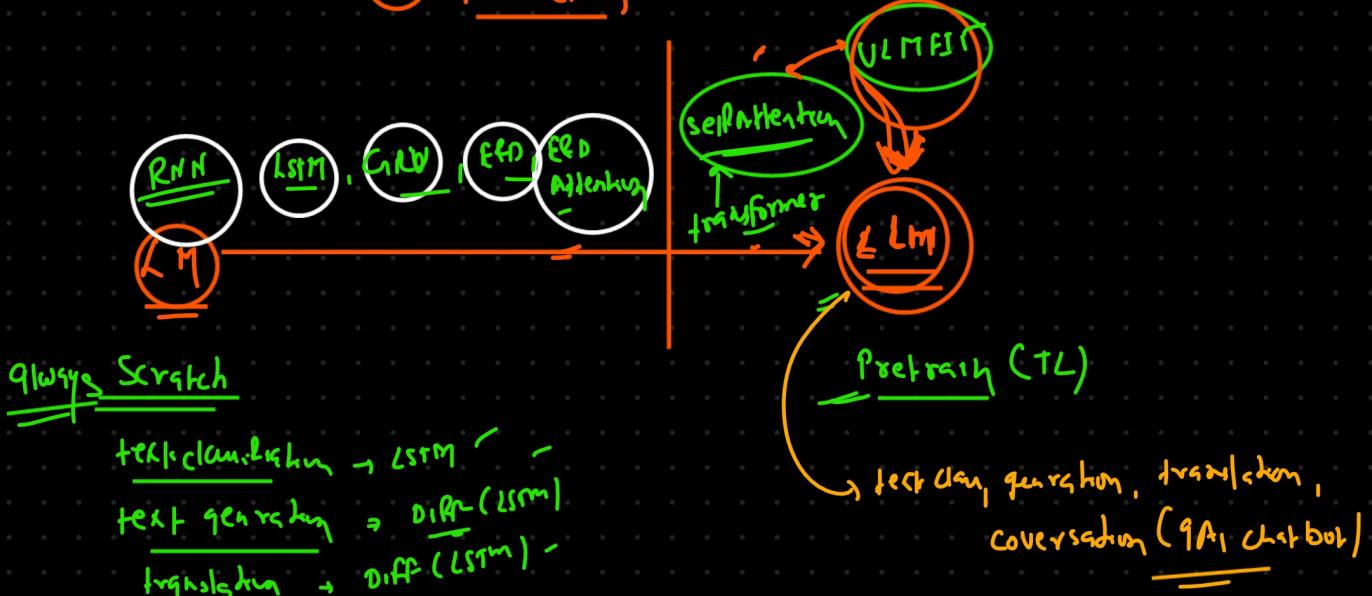
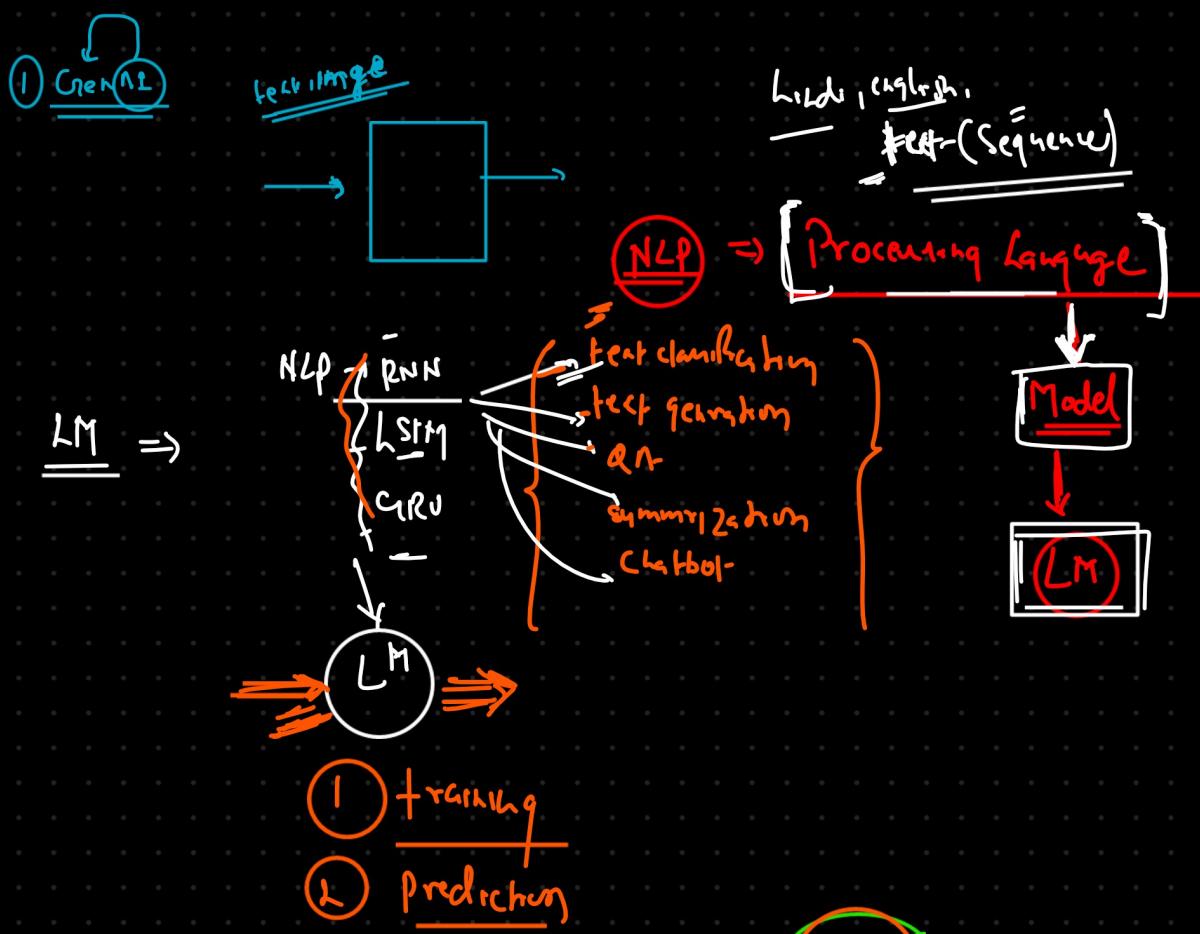
ML/DL Model building

- Training
- ① Data ingestion
 - ② Data processing
 - ③ Model building
 - ④ Model evaluation
- Prediction
- = Model
 - = Predict



- GenAI =>
- ① Data ingestion
 - ② Preprocessing
 - ③ Model building
 - ④ Model evaluating





RNN, LSTM, GRU, Attention

- 1 Sequence →
- 2 huge | Larger X
- 3 huge data X
- 4 ~~1. RNN, LSTM, GRU (E2E) (Seq2Seq)~~
~~2. Architecture~~

Transformer, ULMFiT

- 1 Parallel (fast)
- 2 huge | Larger - seq ✓
- 3 huge data ↗
- 4 (Self-Attention) NN
embedding

Transfer Learning | Pretune

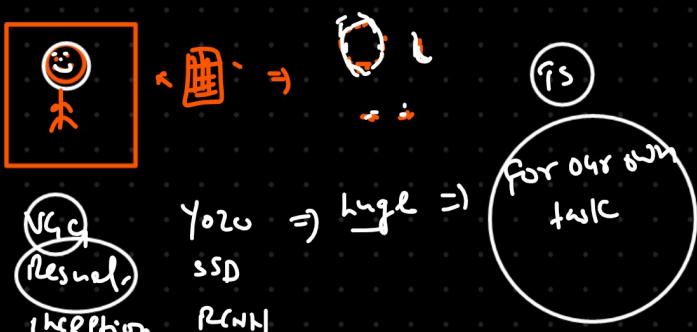
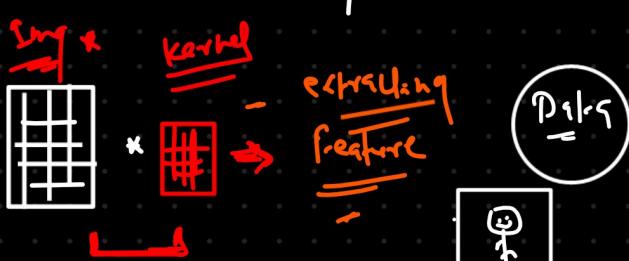
Computer Vision

image classification

obj detection

seg

tracking



CV ↑ NLP ↓

NLP



Model ⇒ LLM

⇒ LLM

* teach
LLM → translation

LLM → new word generated

50000

M4w3ci
901.

2018-19

transformer

+ ULMFiT



Procedure
fast
longer sentence

- 1 Unsupervised pretraining
- 2 Supervised fine tuning

L LM \Rightarrow Next word Pred / Next



- Bert, GPT, TS, BART

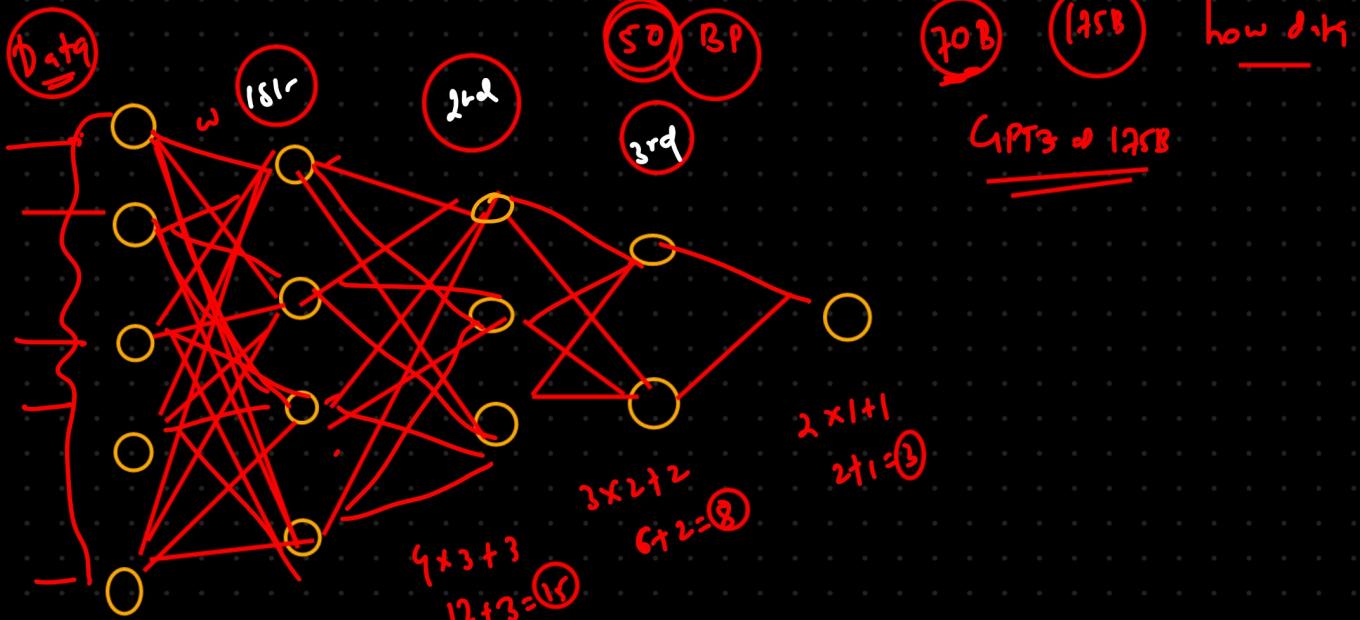
Deep Learning \rightarrow Generative AI LLM

parameter

LLaMA-7B	13B	20B
7 billion	13 billion	20 billion

trainable weights

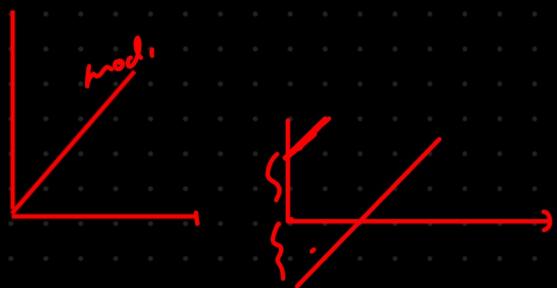
LLM \Rightarrow (NN) ?



$$5 \times 4 = 20 \text{ weight} \\ + 4 \text{ bias}$$

$$= 24$$

$$\underline{24} + \underline{15} + \underline{8} + 3 \\ = 50$$



Internet/(lots) \Rightarrow



VIMPIT

50TB \Rightarrow



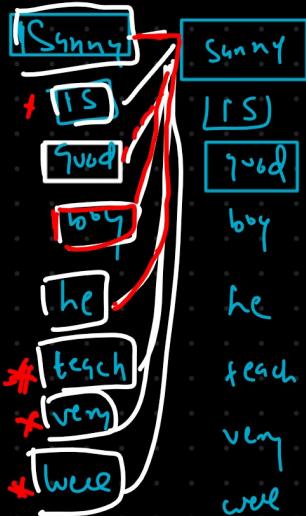
Transformer \rightarrow multihed attention ?

My home is sunny and I am Data Scientist

Sunny is very good with (S he knows Coding

very well. Football is very exciting (inval)

Plays very good cricket. Muni is a great-
Fotballer



SelfAttention

