



Dr. Muhammad Aam...

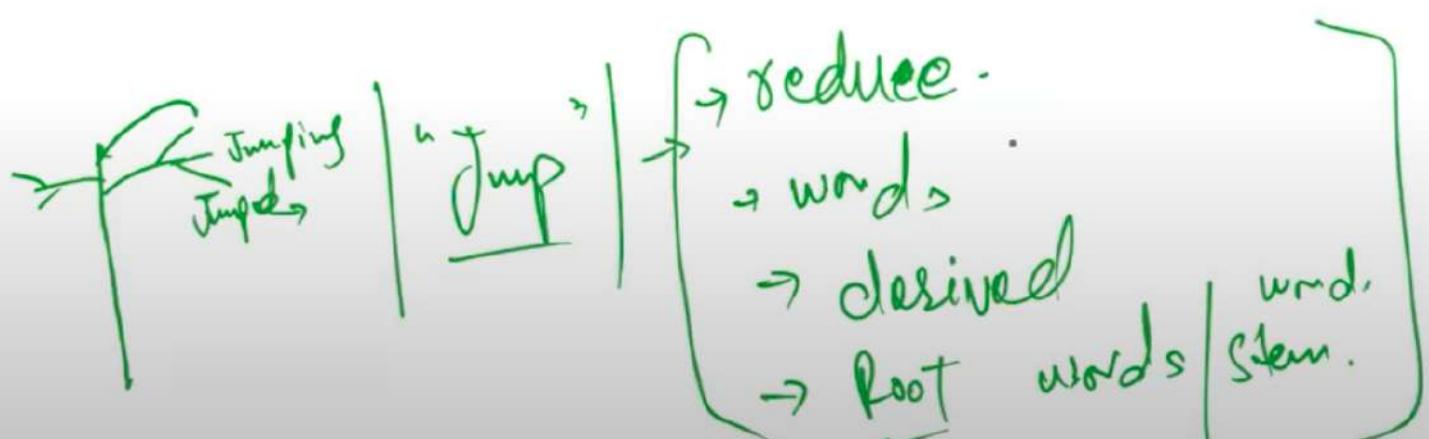
① Tokenization:-

- Process
- Break.
- Sentences
- word/terms.

The cat sat on mat.

"The", "cat", "sat", "on", "mat".

② Stemming:-



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③ Lemmatization → similar to stemming
But → retain the context.
→ meaningful base form.

{ "good", "better", "best" } → Lemmas
["good", "good", "good"]

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④ Stop Words:- [a, an, the, of, in]
filter out.

"the cat sat on a mat" → [^cat, ^sat, ^mat]

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Dr. Muhammad Aam...

④ Stop Words:- [a, an, the, of, in]
filter out.

"the cat sat on a mat" → [cat, sat, mat]

⑤ Bag of words = [a:12, The: 31]

A screenshot of the Microsoft OneNote application. At the top, there's a ribbon menu with tabs like Home, Insert, Draw, View, and Tell me. Below the ribbon is a toolbar with various drawing tools: Text, Lasso, Insert Space, Eraser, Pen, Marker, Highlighter, Ink Colour, and Line Width (0.25 mm, 0.35 mm, 0.5 mm, 0.7 mm, 1 mm). On the right side of the screen, there's a video window showing a man with a beard and a black shirt, identified as "Dr. Muhammad Aam...".

④ Stop Words:- [a, an, the, of, in]

filter out.

"the cat sat on a mat" → [ucat, sat, "mat"]

⑤ Bag of words = (BoW)
[a:12, The: 31] (cat: 12, sat: 13)
(frequency of each token)

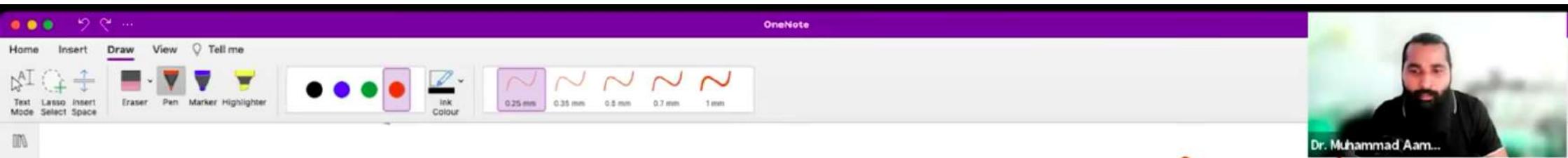
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⑥ TF-IDF (Term Frequency-Inverse Document frequency)

- Numerical Statistic
- Reflect
- Importance of a word / item
- Document

OneNote



⑥ TF-IDF (Term Frequency-Inverse Document frequency)

- Numerical Statistic
 - Reflect
 - Importance of a word / item
 - Document
- [The "cat" "sat" "in" "a" "mat"]
- 39 1 60

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39 1 60

⑦ NER: Named Entity Recognition.

[Ali; works at google] organization. { location, codes

Name.
Person.

```
graph TD; S["[Ali; works at google]"] --> N((Name)); S --> O("organization."); N --> Ali("Ali"); N --> Google("google"); O --> Google; L["location, codes"] --- O;
```

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⑧ POS) Parts of Speech → Tagging:-
(noun, verb, adjective)---

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⑨ Syntax and Parsing:-

→ Rules, principle. (is sitting)

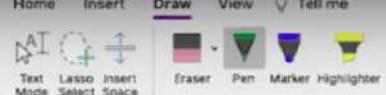
"The cat is sit on mat".

↑



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- ⑩ Semantic Analysis:
→ Meaning of a sentence
"Apple" has high stock rate.
- ⑪ Sentiment Analysis:
→ Computational determine.
→ meaning of Sentic.



(Apple) has high stock sat.



⑪ Sentiment Analysis:

- computationally intensive.
- meaning of sentence
- positive, -ve, neutral, Sad, happy.

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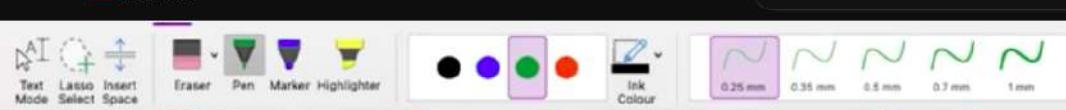
→ Computational determine.

→ meaning of sentence

→ positive, -ve, neutral, Sad, happy.

"This movie is great." (positive)

MA



11 Sentiment Analysis.

- Computational determine.
- meaning of sentence.
- positive, -ve, neutral, Sad, happy.

"This movie is great."

(positive)



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This movie is great,.
(positive)

⑫ Word Embedding:-

king = man , Queen = female

The diagram illustrates the concept of word embeddings. It shows two horizontal arrows originating from the handwritten words "King" and "Queen" respectively, pointing towards a single horizontal line that represents a shared vector space or embedding dimension.

king = man , Queen = female

MA 2:00:48 / 11:33:16 · Key Term in NLP >

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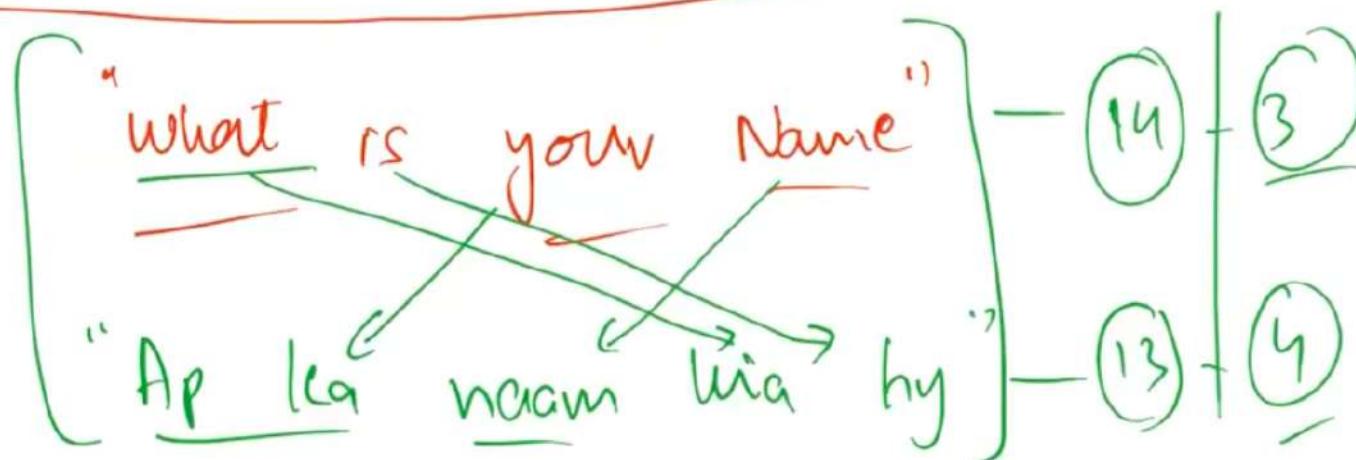
(13) Sequence-to-Sequence Models

"what is your Name"

"Ap le naam lia hai"



(13) Sequence-to-Sequence Models



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"Ap ka naam lia hy") - (13) + (4)

Alalia, "Do you speak English?"

• "Pasha english?"

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(M) Attenan Mechanism

The diagram illustrates the Attenan mechanism. It features a horizontal blue line with four rectangular cutouts. A blue arrow points to the left from the first cutout, and a blue arrow points to the right from the last cutout. Below this, a dashed red line with arrows indicates a back-and-forth motion. To the left of the dashed line, there is a red circle containing the word "Sandige".

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⑬ Transformers:-, Self attention mechanism

→ State of the art.

→ Text classifier, NER,

→ Question answer?

→ **BERT**
→ **GPT-2**

MA 2:11:18 / 11:33:16 · Key Term in NLP >

A screenshot of a video conferencing or streaming interface. At the top, there's a toolbar with various icons for text mode, eraser, lasso, insert, space, and drawing tools like pen, marker, and highlighter. Below the toolbar is a search bar and a microphone icon. On the right side, there's a video feed of a man with a beard, identified as "Dr. Muhammad Aam...". The overall interface is white and clean.

⑬ Transformers:- Self attention mechanism

→ State of the art.

→ Text classif., NER,

→ Question answer?

→ BERT
→ GPT-2

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⑬ Transformers:- Self attention mechanism

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(16) language Model:-

→ fish - - -

→ Madine Lehigh → Vocabulary.

→

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(16) language Model:-

→ fish - - -

→ Madine Lehigh → Vocabulary.

→

"The weather is - - - - -"

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17 BERT :-
= Bidirectional Encoder Representation
from Transformess -

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18 GPT :- Generative Pretrained (Boots form) → Autosegmentive → superhuman like text. → verify 95%.

OneNote

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⑧ GPT :- Generative
→ Autoregressive
→ superhuman like text.
→ verify
- Digital, Perplexity

180mm 100mm

MA

