NLP (1)

Wednesday, 18 August 2021 7:01 PM

Natural Language Processing :-

→ Intelligence is the ability to communicate.

→ NLP is about how we can create algorithms and models that can comprehend human language and speech.

→ Understanding nuances has been a problem for machines.

For eg :-

Q Is king to queen as man is to ______ ?

y = f(king) ⇒ y = Queen

∴ f = (Gender changer)

∴ Gender Changer (man) Ans

Ans :- woman !

Now a quick look at a technique that solves this problem:

Word to Vector

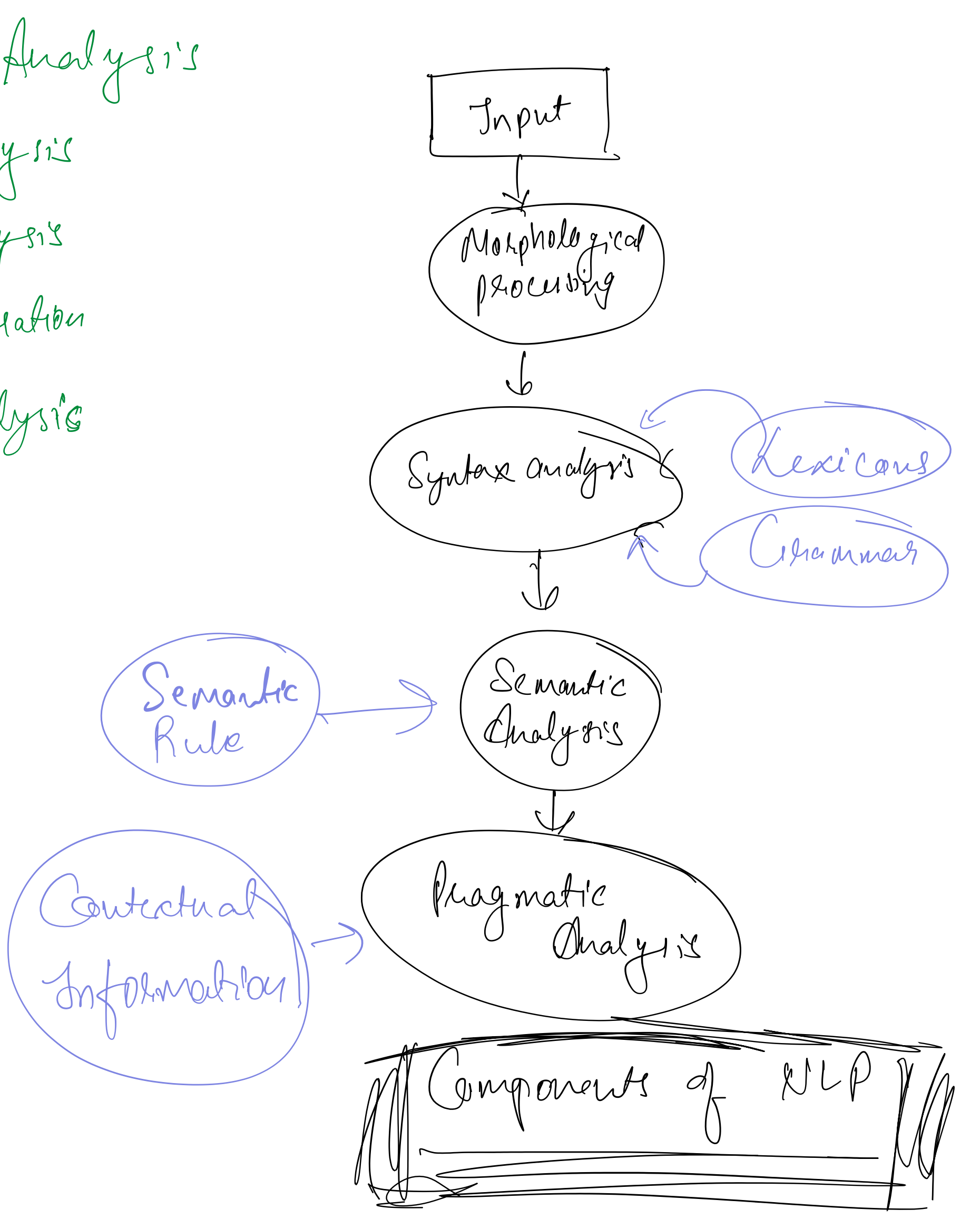
Vector (king) − Vector (Queen) + vector (man)

= vector ?

↳ vector (woman)

Componants of NLP:

(1) Morphological Analysis
(2) Syntactic Analysis
(3) Semantic Analysis
(4) Discourse Integration
(5) Pragmatic Analysis



Morphological Analysis / Lexical Analysis } Analyzing the structure of a ((Word))

→ (Hey!) → HEY → 'H' 'E' 'Y'

Semantic Analysis:-

→ Analyses Meaning

→ Transfers the linear sequence of words into structures.

→ Only focuses on the literal meaning of the words, sentences and phrases.

Eg: (Colorless Green Idea)

Syntactical Analyzer → Colorless Idea

Pragmatic Analysis :-

→ ~~Task of this~~ Interpretation is one of the main Stage.

→ for eg:
the difference b/w

① "Close the Window!"
② "Close the Window?"

One of them is an order and one of them is a request.

Syntax Analysis :-

The syntax refers to the rules & principles that governs the sentence structure.

(Communication involves more than making a side understand what the other is trying to communicate.)

Syntax follows proper ordering of words such that the meaning and context remain intact.

How to Implement NLP ??

① Machine Learning (hatest)
② Stastical Inference (legacy)

NLP Products

① Recommendation Systems
② Gmail → Spam detection
③ Siri, Alexa, Google Assistant
④ Banking and Document processing
⑤ Chat bots on IRCTC / Swiggy / Zomato.

The Barsics of NLP for fect !-

① Sentence Tokenization
② Word Tokenization
③ Text Lemmatization and Stemming
④ Stop words
⑤ Regex
⑥ Bag of words
⑦ TF-IDF