What is the role of Morphology?

The role of morphology is to study and analyze the structure of words and how they are formed in a language.

Briefly write about Topic Boundary Detection

Topic Boundary Detection refers to the task of identifying boundaries or transitions between different topics or subtopics within a given text or conversation. It involves automatically determining the points at which a topic changes, allowing for better organization and understanding of textual information.

Differentiate Syntactic and Semantic Parsing

Syntactic Parsing	Semantic Parsing
Analyzes the grammatical structure of a sentence.	Extracts the meaning and representation of a sentence.
Focuses on syntactic roles and relationships between words.	Captures the underlying semantics and relationships between words and entities.
Deals with the syntax and hierarchical arrangement of words.	Maps the sentence to a formal representation or logical form.

Determines the grammatical correctness of a sentence.	**Understands the meaning and intent behind the sentence.**
Helps in syntactic analysis, grammar checking, and parsing sentences based on grammar rules.	**Aids in natural language understanding, question answering, and information extraction tasks.**

What is Hyper graphs explain with example:

A hypergraph is a generalization of a graph where edges can connect any number of vertices, not just pairs. For example, consider a group of people and their friendships. In a hypergraph, each friendship connection can involve more than two people, allowing for more complex relationships to be represented.

What are Dependency Graphs?

A dependency graph is a visual representation of the dependencies between objects or tasks. It uses nodes to represent the objects or tasks and directed edges to show the dependencies. It helps understand the order of execution and identify critical paths or bottlenecks.

Dependency graphs are powerful tools for managing complicated chains of calculations that make it easier to understand calculation flows, analyze dependencies, efficiently recalculate values after data changes, and drill into calculation problems.

What is Meaning Representation?

Meaning representation refers to the process of representing the meaning or semantics of natural language expressions in a structured form. It involves capturing the essential

information and relationships expressed in a sentence or discourse, typically for computational purposes such as natural language understanding, machine translation, or information retrieval. Meaning representations can take various forms, such as logical forms, semantic graphs, or knowledge graphs, and they aim to capture the underlying meaning and content of language in a more structured and interpretable manner.

Explain about Systems?

In the context of Natural Language Processing (NLP), systems refer to software systems or frameworks designed to process and understand natural language text.

What is Predicate-Argument Structure?

Predicate-Argument Structure refers to the relationship between a predicate (verb or action) and its associated arguments (nouns or phrases) in a sentence. It describes how arguments are syntactically and semantically related to the predicate. The structure captures the roles and dependencies of arguments in conveying the meaning of the predicate. For example, in the sentence "John eats an apple," the predicate "eats" has two arguments: "John" (the subject) and "an apple" (the object). Understanding the predicate-argument structure helps in semantic analysis, information extraction, and natural language understanding tasks.

Write short notes on the N-Gram model.

The N-Gram model predicts word probabilities based on the occurrence of preceding n-grams. It is used in language modeling and tasks like text generation and speech recognition. Markov assumption simplifies the model, while smoothing techniques handle unseen n-grams. Higher n captures more context but increases sparsity.

Write the Selections of Sub word units, give me a short answer

Subword unit selection in NLP involves various approaches:

1. Character-based: Words are divided into characters or character sequences, handling out-of-vocabulary words and capturing morphology (e.g., BPE, Unigram LM).
2. Morpheme-based: Meaningful linguistic units or morphemes within words are identified, aiding word structure and handling morphologically rich languages (e.g., Morfessor, Recursive Morphology).
3. Syllable-based: Words are segmented into syllables, aiding pronunciation and segmentation tasks (e.g., SUR, syllable-based models).

Each approach has its strengths and can be chosen based on the specific requirements and characteristics of the language or task at hand