



## **II. TECHNIQUES OF WORD SENSE DISAMBIGUATION**

To remove the word sense disambiguation following are the three major approaches:

1. Supervised approach
2. Unsupervised approach
3. Knowledge based approach

### **1. Supervised approach**

This approach use senseannotated corpus. It uses machine learning technique to disambiguate word.

Following are the techniques of supervised WSD:

- Naïve Bayes
- Decision tree
- Decision list
- Instance based leaning
- Support vector machine

### **2. Unsupervised approach**

It uses annotated corpus and ambiguity is resolved by finding the nearest or closest word having similarities.

Following are the techniques of Unsupervised WSD:

- Context clustering
- Word clustering
- Co-occurrence graph

### **3. Knowledge based approach**

Machine readable dictionary and large corpus are used.

Following are the techniques of Knowledge based WSD-

- Lesk Algorithm
- Semantic Similarity
- Selection preferences

## **III. APPROACHES FOR MARATHI WORDS SENSE DISAMBIGUATION**

The authors [1] proposed the graph based algorithm to resolve ambiguity based on word sense and context domain. They explored this algorithm to generate a graph comprising the word to be disambiguated along with their corresponding candidate sense. Marathi Wordnet has been used for the proposed system. They use Google Input Transliteration for inputting the text and detail feature of each word is obtained through Wordnet for a given sentence.

They proposed [3] Genetic Algorithm technique through which they resole the ambiguity of the words based on their context domain and their senses. Author uses this technique because in a review they found more precise result as compared to the other WSD technique.

In paper [4] authors proposed work to disambiguate the sense of the Marathi word using hybrid approach. This approach consists of a modified Lesk algorithm with Support Vector Machine. In proposed system they use combination of the knowledge based and machine learning based approach. In modified Lesk algorithm context window is used, which forms the right and left words of the target word is chosen dynamically. This modified Lesk algorithm used with SVM (Support Vector Machine) classifier for better result of disambiguation.

The authors [6] described rule based approach to disambiguate the Marathi word for a single sentence. The authors model used two different rules apply such as word rule and sentence rule. Their model successfully identifies the correct sense of the given text from the predefined possible senses. The model accuracy is approximately 75% for Marathi language Adjectives, Noun and Verbs words.

#### **IV. CONCLUSIONS**

In Natural Language processing word sense disambiguation is very useful for Machine translation, Question-answering, Text summarization, information extraction, etc. Due to lack of resources, very few works is done for Indian languages especially for Marathi language. A lot of work needs to be done for Marathi language WSD. In this paper we describe different technique of WSD for Marathi language also explain various approaches of word sense disambiguation.

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