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ANALYSIS OF PARSING TECHNIQUES FOR DISAMBIGUATION

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ABSTRACT:

Word Sense Disambiguation is an open problem, which is an application of Natural Language Processing. These ambiguity are removed by many techniques such as MINION, Association rules etc. The main aim is to remove the ambiguity of a word in a given context of a sentence using parsing techniques (Top down parsing and Bottom up parsing). In this paper, we take a word which has two sentences and draw top down parsing and bottom up parsing for these sentences, and showing the best technique where ambiguity of a word in a given context is removed. This paper provides simple and correct meaning of a word in a given context, i.e. disambiguated word.

Keyword: ***Top Down Parsing, Bottom Up Parsing, Word Sense Disambiguation, Natural Language Processing.***

I. INTRODUCTION

Word Sense Disambiguation is to assigning the correct sense of a word in a given context. Some words having the same spelling but their meanings are different in their given perspective. Word Sense Disambiguation is the problem of determining which meaning of a word is activated by the use of the word in a given context, a process which appears to be largely unaware in people. WSD is a natural language processing classification problem. Given a word and its possible sense, as defined by a dictionary, classify an occurrence of the word in context into one or more of its sense classes. Parsing techniques (top down parsing and bottom up parsing) are used to disambiguate a word according to the sense of a word. Parsing is defined analysis of a string in a language or in a natural language processing. Top Down parsing technique start from the left to right, it gives left most derivation of the sentence using the formal grammar rules. Bottom up parsing start with the input symbol and to rewrite the start symbol. The example of bottom up parsing is LR Parser.

II. RELATED WORK

Provide an approach to disambiguate a word to the appropriate sense using MINION that is constraint solver, in which the word to word alignment is performed. The correctly aligned words are collect from the MINION and then rules are formed using the CLIPS language (in which the *Karka Theory* is used), finally get the correct sense of a word. Giving the simple and correct sense of a word in a given context [1]. Provide an approach to get the correct sense of a word in particular language (i.e. Manipuri Language) . Conventional positions and context based features are used to capture the correct sense of a word. The knowledge acquisition is used to get the correct sense of a word [2]. Provide an approach to select a feature word by using methods i.e. window based methods and dependency based. LU Wenpeng, HUANG Heyan and ZHU Chaoyong provide a method to selecting the features accurately with the using syntactic parsing.

Dependency parsing and phrase structure parsing are the kind of syntactic parsing is used by the LU Wenpeng, HUANG Heyan and ZHU Chaoyong [3]. Provide an approach to get the correct sense of word in a given context by using the knowledge based methods, association rule, and corpus-based methods. Ajay and Samit provide an approach to construct a database for word sense disambiguation by using the association rule, which can be used to mine the correct sense of an ambiguous word [4].

Provide a statistical method to assign a correct sense of a word; the error rate is decreased by 13 %. F. Brown Peter, A. Della Pietra Stephen, J. Della Pietra Vincent and L. Mercer Robert calculated the sense of a word in a given context using probability [5]. Rada Provide an approach to get the correct sense of a word by using Wikipedia. Wikipedia is a source of annotations where correct senses are stored according to the given context. By using the Wikipedia annotation senses are disambiguate of word that gives accurate and reliable sense of classifiers [6].

Provide an approach of Bayesian belief network i.e. probabilistic is used to semi-learning supervised approach to utilize the Word Net. Carmichael [7] used text based algorithm for detecting automatic speech and found improvement average 73.64% success rate in identifying words/phrases.

III. PROBLEM DEFINITION

This paper word sense disambiguation using parsing techniques gives a solution to disambiguate a word. It is the aim that the many approaches are also exist to get the correct sense of a ambiguous word, we provide an simple and accurate approach to get the meaning of a word using Top Down Parsing and Bottom Up Parsing.

IV. PROPOSED WORK

In this paper, we take a word which has ambiguous meaning in a given context of a sentence. Now our aim to remove the ambiguity of a given word in a given sentence. We take a word **Top** which has two meanings: लट्टू. and सर्वोच्च we are using parsing techniques (top down parsing and bottom up parsing) to disambiguate a word. First we design a top down parsing for a given sentence.

Sentence: - You were on top priority.

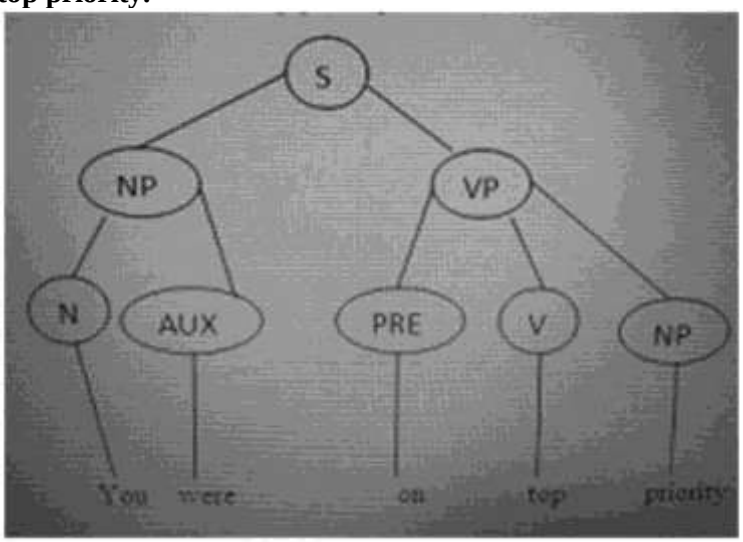

Fig. 1

Fig 1 shows the top down parsing of a given sentence. In top down parsing, first start from S (root) and then S is divided into subparts such as NP and VP. We obtain a sentence (you were on top priority.). The second parsing techniques are bottom up parsing. In bottom up parsing, start from sentence (you were on top priority) and go to root S. These parsing techniques are used to remove an ambiguity of a given sentence.

Sentence: - The movement of axis is top around the vertical is called procession.

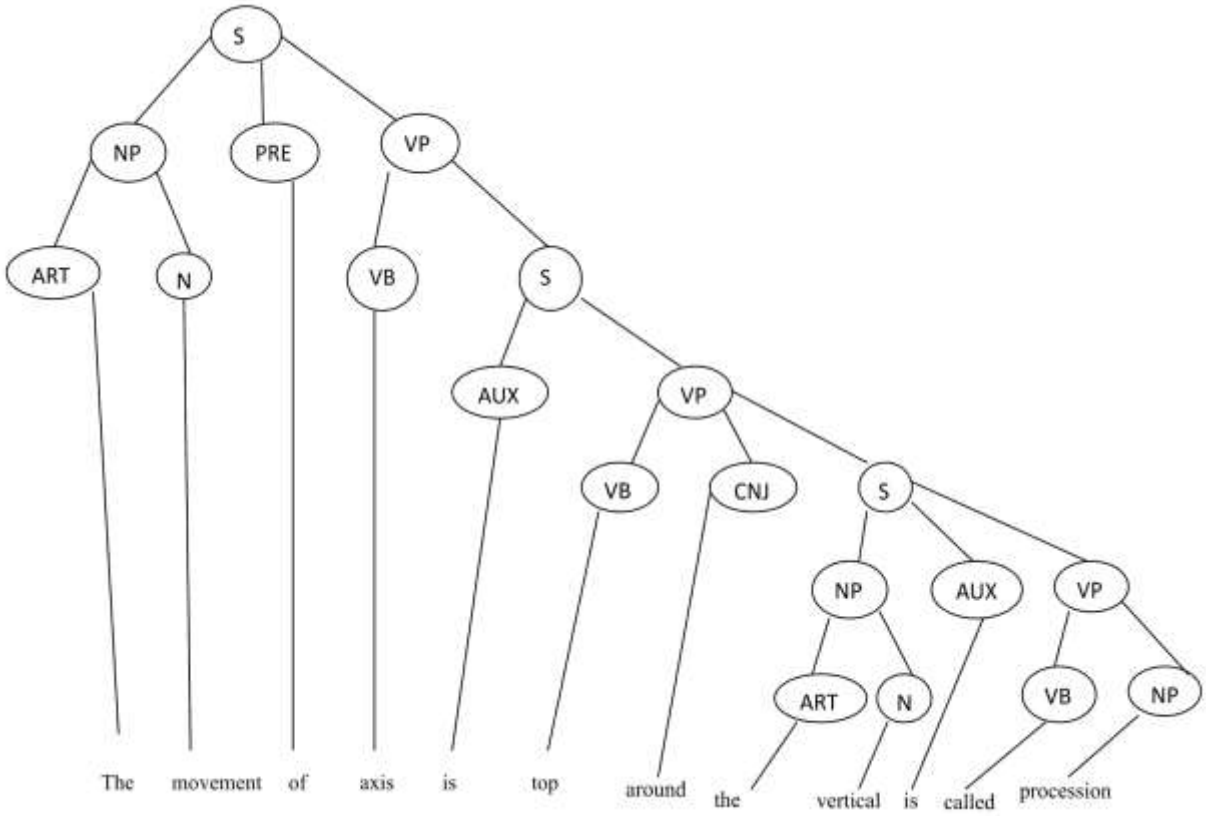

Fig. 2

Fig. 2 shows the top down parsing of another sentence that is made by same word (top). But these sentences produce an ambiguity. These ambiguities are removed by the parsing techniques. As we read from starting until the word that produce ambiguity, we confuse what is the actual meaning of that word are used in the sentence. These confusion are removed by as we go down in the parse tree, then we understand the actual meaning of that word. So in this parsing technique we understand what the actual meaning of that word is.

Both of these parsing techniques, bottom up parsing is best to disambiguate a word because in bottom up

Around the vertical is called procession

parsing whole sentence divided into NP,VP,AUX etc. and these are easily understandable by every person.

V. CONCLUSION AND FUTURE WORK

We conclude that this paper provides a comparison of parsing techniques to disambiguate a word. The parsing technique is categorized into top down parsing and bottom up parsing. Parsing techniques provide the proper and efficient meaning of the sentence. Future attempt can be made in direction to improve the accuracy and efficiency of an ambiguous word.

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