Swing Detection Using Onto Tree

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ABSTRACT

In this paper, we present an approach of Opinion Mining by combining Data structure storage techniques and Ontology Concept to improve understanding about a Sentence/ statement. In this Method, we applying classification task to focus on forming a right positive and left negative subtree and to calculate its positive or negative swing. It serves many Purposes such as e.g., opinion mining, Inclination and proper designing. Most Existing techniques utilize a list of *opinion* (also called *opinion Lexicon*). Opinion words are of both Characteristics (positive or negative). By using binary search technique we have developed Unique onto trees that utilize tree structure to improve feature ranking. In the end, we have formed a swing table that projects the inclination of any statement/opinion or passage.

Keywords

Opinion mining, Feature Ranking,
BSOT, RPOT, LPOT, Swing Table

1. INTRODUCTION

In recent years ontology has emerged as an effective tool in the field of information science and it also effectively resolve complex problems like storage and sorting of it. It has also been well discussed that we can form ontology as per ones; Understanding. Increased understanding of a given opinion or written statement will surely be helpful in so many scenarios from market research to product launching, feature ranking and most importantly it will allow all to prepare and will help us to reduce cost by a serious margin. Common word study out of any statement will surely help us to save the time of all from a manufacturer to customer/buyer to purchaser/artist to admirer and writer to reader. Any popular movie/book or any other product can get hundreds of reviews which will be the combination of all types from good to bad or average as well. Some opinions are also in the form of the paragraph and which makes it hard for a potential reader to read them to make an informed decision on whether to follow that certain reviews or not. If read views are only full of admiration and in reality product is not that much good enough then any reader will surely lose his/her money and time, to go through long, complex and misguided review.

Ontology has been studied by many researchers in recent years. Although some methodologies for building ontologies have been proposed to improve the ontology development process **[10, 11, 12, 13, and 14]** building ontology manually is a time-consuming and laborious activity that requires the work of highly trained ontology engineers. Moreover, for designing ontology, there is no predefined thumb rule.

Like any other paper or approach, it also has some bottlenecks, the problem with this approach is that it has a limited range of pre-declared words; either we can say there is no specific way to know the orientation of any word. In our paper we have designed an ontology creation by passing and checking any statement/comment or paragraph, our design of BSOT will read the complete sentence in a shot and will produce and categorize all possible sentiments/emotions and special purpose words and will also produce the +ve and –ve shades in its respective left and right.

First of all By checking and finding its +ve and –ve shades we can especially find swing of any statement/review /comments or any long sized paragraph .instead of observing the current sentence alone it can read and find out the swing inclination a complete paragraph or a set of paragraphs.

Secondly, It is based on our Results, we are quite confident to say that when there are multiple conflicting opinion words in a sentence, existing methods are unable to deal with them well. The results show that the new method outperforms the existing methods significantly.

We have organized our discussion as follows. In section 2 we discussed previously work done in the field of swing detection. Under which we also discussed our method and the evaluation too. We also discussed Sentiment analysis and web2.0.In

section 3 we described the problem definition. in the section we described our proposed technique, which comprises of the concept undertaken, the types of the onto the tree, our proposed algorithm and the pattern rules to create onto the tree. In section 6 we conclude with a summary of what we have achieved and in section 7 future work is given.

2. RELATED WORK

This section provides an overview of the relevant related work done in the area of the ontology.
Ontology has been studied by many researchers in recent years**.** Although some methodologies for building ontologies have been proposed to improve the ontology development process **[10, 11, 12, and 13],** building ontologies manually is a time-consuming and laborious activity that work done by trained ontology engineers. an ontology is built manually tends to be biased toward its developer's view. Ontologies can be Designed by various data types such as knowledge bases, textual data, dictionaries, relational schemata and semi-structured schemata, Most works related to automatic ontology construction have been directed toward extracting ontology from texts **[14]**. A typical approach in ontology extraction from the text first involves term extraction from a domain-specific corpus at hand.[1] proposed an approach to refine the merged ontology, which tailors the merged ontology
By removing the instantiation redundancy and subsumption redundancy and checking the consistency of the consequential ontology. In [2] a framework for designing information systems on top of OWL ontologies has been proposed. In [3] a machine-made system of ontology construction was brought up. In [5] construct a two-tier ontology. In [6] a new method for learning ontologies has been developed and this method applied LDA model to extract topics as the concept of ontologies from given document corpus. Paper [7] presented a word-based method for extracting sentiment from texts. Paper [8] proposed an effective method for identifying semantic orientations of opinions expressed. In[9] a method for determining a sentiment associated with an entity has been proposed.
Our approach of detecting swing by using a not tree mainly focusses on finding the inclination and arranging a given ontology by forming an onto the tree. The reason behind using tree is not only because it properly represents any information but also it allows to traverse and search both in upward/downward and left /right sides as well. Swing table used in our method helps to project the complex detail in a simple and systematic manner.

3. PROBLEM DEFINITION:

Each feature in any ontology has its specific importance for information representation. The correlated study of such features can project their differences and importance. Instances are usually objected under concepts, which may partially or completely reflect any ontology for its better understanding we should try to find there inclination on both positive and negative scale. Therefore, instances can express concepts more clearly. Ontology is convenient for information sharing, establishing the network information under a well-formatted structure which allows information sharing and knowledge reuse and describing online documents through ontology description languages. Traditionally, ontology construction usually uses the following methods for ontology construction: *relational analysis*, *clustering*, and formal *concept analysis*. The *relational analysis (FCA)* discovers and clusters the relations of keywords, such as synonyms, roots, hypernyms, and hyponyms. It then constructs the ontology by manmade or other methods. For example, in the framework ofWebOntEx (Web Ontology Extraction) [15] the keywords in the web pages of particular domains are clustered by relations, such as synonym, in the WorldNet to obtain concepts. The ontology is constructed by means of the positions relevant to the HTML tree formed by the connection of the web pages in the tag information and particular domains. J. U. Kietz used the relations between hypernyms and hyponyms in the GermaNet to acquire concepts. *Clustering* usually groups keywords of documents into clusters and constructs ontology by selecting representative concepts from each cluster. For example, TextOntoEx used the semantic roles to cluster

keywords. *Formal concept analysis* uses the binary relation matrix between documents and vocabulary to generate the supremum concept set. The inter-conceptual hierarchical relation and a complete partial sort are formed by the sets of all the concepts. After constructing the inter-concept level relation by means of FCA construction, the concept figure of ontology is thus constructed

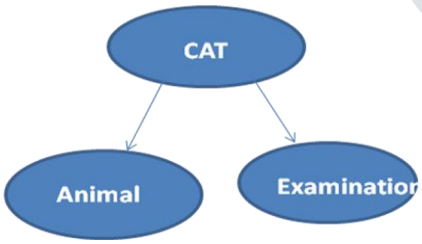
4. THE PROPOSED TECHNIQUE:

The explanation for using a tree structure to represent an ontology can be very well understood by observing the fact that, first of all, there is no such specific thumb rule defined for representing any ontology ***"An ontology can be represent as per one's understanding and*** *requirement ".*

4.1 Concept Undertaken

The logic which we have adopted for designing our ontology follows a very famous storage scheme under data structure called **trees-**

Example -



The tree created above represents that an ontology can also be formed or designed in such a way, in the e.g. Depicted above shows that "Cat "A word, Animal or an Examination type can be arranged in such a manner" ,Thus by using the same further we have formed different type of onto trees to represent all possible sentiments and which finally leads to find its swing or inclination,

4.2 Type of Onto Tree

NOT –NULL –ONTO- TREE –

An onto the tree with no child at all

.

RPOT- This ONTO TREE will contain all positive sentiment on its right side

LPOT-

This onto tree will contain all negative emotions at its left side.

BSOT-

It will follow a proper Binary search tree approach

4.3 Algorithm

Proposed Algorithm

1. **Algorithm Beginning**
2. **Step 1-** Create a user-defined data type (Struct), having attributes
3. **Struct node --> attributes all**
4. **Struct node *left;** /* Self referential pointer variable
4. **Char array [ ];** /* used to store data
5. **Struct node *right;**

/* Self referential pointer variable

Step 2- We have used 4 different Function Prototype to solve different purpose

6 Insert ( )
/* It is used to enter the string from main body

7 Check ( ) /* It matches the words from given string entered

8 Display( ) /* It is used to display tree formed

9 Main( ) /* It comes under main body of the program and performs all Logics

Step 3- Insert string and search it in the Insert function

10. Now it creates Root node in them
Apply check function for matching the (positive and negative) sentiments in the array
11. It generates / Creates left and right Nodes
Referential array ends

/* Functionality of Check function

12. Input [i] = array of input string

13. Post [ ] = array of the +ve sentiments

14. Negt [ ] = array of the –ve sentiments

15. Match 1st word of Input [i] with both array

16. If found
If Input [i]<- Post [ ]

17. Then generate Left Node

18. Left <- Input [i]

19. End if

20. Input [i] <- Negt [ ]

21. Then generate right node

22. Right <- Input [i]

23. Else
24. i = i +1 ;
25. **Step 4 –** Repeat Step 1
26. **Step 5**- Referential array ends
27. **Step 6 –** Display -> Display the sentiments
28. **Step 7 –** Print the tree in the input f

4.3 Pattern Rules to Create ONTO TREE

This is the pattern how we have categories the swing of statement-

1. Rule 1- If (Positive value)
Create Left Node
2. Rule 2- If (Negative value)
Create Right Node

In some exceptional cases like “Work” is a neutral verb.

The system detects the patterns and
Then applies the rules written above.

Based on this rules we are creating an onto a tree for each given statement.

Constructed ONTO TREE representing Swing is as Follows-

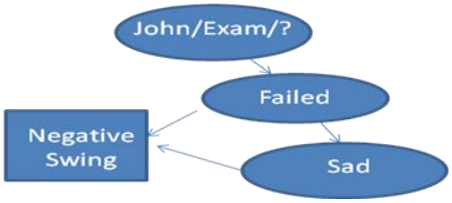
String No	Root Node values	Left Sub Tree values	Right Sub Tree Values	String Inclination
S1	**Ram/Boy Or Empty Or Complete String**	**Good, Nice**	**Bad**	**Positive**
S3	**John/Examination Or Empty Or Complete String**	**-**	**Failed, Sad**	**Negative**
S4	**Movie Or Empty Or Complete String**	**Outstanding**	**Bad**	**Neutral/ Contradictory**

String 1- <u>Ram is a good and nice boy.</u>
For such a string our method suggests that
It only contains positive words and as per our algorithm only left root will be formed

Onto Tree on the basis of Algo is as follows

String 2. ***John got failed in the examination That's why he is sad.***

For such a string our method suggests that
It only contains Negative word and only right roots will be formed



This is a swing table based on all different strings passed by examing this we can understand what is the swing of a given string

5. CONCLUSION

This paper shows an effective method for identifying swing and to built an onto the tree from a given statement or a string. It resolves an important purpose of finding a swing inclination of any string and also helps to arrange a high amount of data records by forming Onto-tree. Previous research and paperwork have used long and time-consuming approaches and more importantly, they were unable to produce any well formed and easy to understand structure. Our method uses the concept of the data structure as well which makes it more complete. Tree and Table based results show that the proposed method performs better.

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