Chapter 64
Fuzzy Opinion: Detection of Opinion Based on SentiWordNet Dictionary by Using Fuzzy Logic

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ABSTRACT

In this paper, the authors propose a new approach to detect opinion by SentiWorNet with the introduction of the concept of fuzzy logic. In this vein, the authors will build detection system fuzzy opinion "Fuzzy Opinion." To give flexibility to their system, they will use a threshold of opinion. The texts are represented by a vector of word (bag of words) which will be reduced to vector the word bearer opinion by filtering with SentiWordNet. Consequently, the heart of their approach is to associate each text into two scores (bi- scoring): Sp represents the positivity of text and Sn represents the negativity of text; this is the stage of Fuzzification. To identify opinion of a text and to ensure flexibility, the authors have used a threshold of opinion. Further, they have adapted the defuzzification step for identifying opinion. Finally, they compared the results of this approach with the results of the same approach without fuzzy logic in using the same corpus.

1. INTRODUCTION AND PROBLEMATIC

Computer science is currently highly recommended in different areas as a main tool to do such daily tasks: queries go far enough: in addition to process speed and good memory, also requests that help us to make decisions, plan our day charge, abstract and translate our texts or detect opinion of the Customer of a product to improve the earnings of the company.

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On the other hand, computer scientists, especially those working in the axis of artificial intelligence have another purpose, i.e., to achieve the implementation of human thinking with all its benefits inference, uncertainty modelling and experience. They were able to respond to requests from users. Currently, there are planning systems (even biometric systems), system of translations, summary, or SAD SAID (system which helped the interactive or non-interactive decision). Researchers were also able to model human thinking. In our case we will figure out that the uncertainty was modelled as fuzzy logic.The current literature presents two approaches for detection of opinion:

- Based on a corpus (learning)
- Based on a dictionary

We built detection system fuzzy opinion "Fuzzy Opinion" using the second approach to opinion detection and implementing fuzzy logic in the process of opinion detection and to provide flexibility to our system, we used a threshold of opinion. Thus, our work is designed to answer the following questions: Does the use of fuzzy logic in detection of opinion useful? If so, what is its impact? And what is the impact of threshold opinion?

2. MATERIALS AND METHODS

2.1. SentiWordNet

SentiWordNet is a widespread opinion dictionary; SentiWordNet, we used version 3.0. All which is an improvement of SentiWordNet1.0 (noting That SentiWordNet 1.1 and 2.0 has not published). SentiWordNet can be defined as a lexical resource specifically designed to be used by the Application of Detecting opinion and feelings; SentiWordNet 3.0 is available to the research community.

SentiWordNet is the result of an annotation of all synsets of WordNet: It Assigns to each word (synsets) an opinion score. SentiWordNet contains 1,000 synsets which makes it very small Compared to the WordNet. Besides the 1000, it neglects all other automatic input. One another weakness is that thesis; many of synsets are not carrying opinion.

2.2. Twitter

Twitter is synonymous with "chirp" and it is a micro blogging network allowing users to post short messages called tweets on free internet, use an instant messaging, and many other advantages, which made it a hybrid between the blog and the open and asymmetric public chat.

Noting that the size of the tweets is limited to 140 characters! No, this is not a drawback. On the contrary, it is a great advantage: the exchange of opinions between the wider communities will be easier and more precise because the message is short.

The terminology is associated with tweets are as follows (Table 1):

- **Emoticons**: Facial expressions are the pictorial representations which express the user's mood. It also contains the punctuations and letters.