

# Opinion Mining In Figures of Speech in Text.

Pratik N. Kalamkar , A.G Phakatkar

**Abstract**— Opinions are one of the most importance as they can help us to predict sentiments of people regarding a certain product, Service or person. Given a set of evaluative statements that contain opinions (or sentiments) about an object, opinion mining aims to extract attributes and components of the object that have been commented on in each statement and to determine whether the comments are positive, negative or neutral. In this paper we propose a method for opinion mining from statements that are in form of figures of speech. Figures of Speech are integral part of daily language use.

**Index Terms**— Figures of speech, Opinion mining, Sentiment detection, Semantic analysis, Text pre-processing.

## 1 INTRODUCTION

TEXTUAL information in the world can be broadly classified into two main categories, facts and opinions. Facts are objective statements about entities and events in the world. Opinions are subjective statements that reflect people's sentiments or perceptions about the entities and events. Much of the existing research on text information processing has been (almost exclusively) focused on mining and retrieval of factual information, e.g., information retrieval, Web search, and many other text mining and natural language processing tasks. Little work has been done on the processing of opinions until only recently. Yet, opinions are so important that whenever one needs to make a decision one wants to hear others' opinions. This is not only true for individuals but also true for organizations.[4]

A lot of opinion holders make use of Figures of Speech while writing review, commenting on some product or person. Figure of speech, is any intentional deviation from literal statement or common usage that emphasizes, clarifies, or embellishes both written and spoken language[1]. Forming an integral part of language, figures of speech are found in primitive oral literatures, as well as in polished poetry and prose and in everyday speech. Greeting-card rhymes, advertising slogans, newspaper headlines, the captions of cartoons, and the mottoes of families and institutions often use figures of speech, generally for humorous, mnemonic, or eye-catching purposes

Most figures in everyday speech are formed by extending the vocabulary of what is already familiar and better known to what is less well known.

## 2 CHALLENGES

Opinion mining faces challenges like irony and sarcasm in opinions. Therefore sentiments analysis is great challenge while analysing a opinions expressed as figures of speech. In many figures of speech adjectives are indirectly in form of noun given by assuming some properties of noun. It is there-

fore a challenge for current systems that tag parts of speech on words to make noun think as adjective whenever a opinion holder writes his opinion in form of Figures of Speech.

Also with long list of commonly used figures of speech it is a challenging task to identify them all and make out appropriate meaning.

## 3 BACKGROUND

A Figure of Speech is a departure from the ordinary form of expression, or the ordinary course of ideas in order to produce a greater effect.

Figures of Speech may be classified as under:-

- (1) Those based on Resemblance, such as Simile, Metaphor, Personification and Apostrophe.
- (2) Those based on Contrast, such as Antithesis and Epigram.
- (3) Those based on Association, such as Metonymy and Synecdoche.
- (4) Those depending on Construction, such as Climax and Anticlimax.[1][English grammar and composition by Wren and Martin].

### Resemblance

Simile: - In a Simile a comparison is made between two objects of different kinds which have however at least one point in common.

The Simile is usually introduced by such words as like, as or so. Examples:-

1. The Assyrian came down like a wolf on the fold.
2. The righteous shall flourish as the palm tree.

The following are some common similes of everyday speech:-

Mad as a March Hare; as proud as a peacock; as bold as brass; as tough as leather; as clear as crystal; as good as gold; as old as the hills; as cool as a cucumber.

A comparison of two things of the same kind is not a Simile.

Metaphor:- A Metaphor is an implied Simile. It does not, like the Simile, state that one thing is like another or acts as another, but takes that for granted and proceeds as if the two things were one.

Thus, when we say, 'He fought like a lion' we use a Simile, but when we say, 'He was a lion in the fight', we use a Metaphor.

Examples:-

- Author Pratik N.Kalamkar is currently pursuing masters degree program in computer engineering at Pune Institute of Technology, India. E-mail : [pratik.kalamkar@yahoo.co.in](mailto:pratik.kalamkar@yahoo.co.in)
- Co-Author A.G Phakatkar is professor of Computer Department at Pune Institute of Technology, India

1. The camel is the ship of the desert.
2. Life is a dream.
3. The news was a dagger to his heart.
4. Revenge is a kind of wild justice.

Personification:- In Personification inanimate objects and abstract notions are spoken of as having life and intelligence.

Examples:-

1. In Saxon strength that abbey frowned.
2. Laughter holding both her sides.

### Contrast

Antithesis: - In antithesis a striking opposition or contrast of words or sentiments is made in the same sentence.

Ex. Speech is silver, but silence is golden.

Oxymoron:- Oxymoron is a special form of Antithesis (Directly opposed or contrasted; mutually incompatible.), whereby two contradictory qualities are predicted at once of the same thing.

Ex. She accepted it as the kind cruelty of the surgeon's knife.

Irony: - Irony is a mode of speech in which the real meaning is exactly the opposite of that which is literally conveyed.

### Association

Metonymy: - In Metonymy (literally, a change of name) an object is designated by the name of something which is generally associated with it.

The Bench, for the judges.

The House, for the members of LokSabha.

Synecdoche:- In Synecdoche a part is used to designate the whole or the whole to designate a part.

Give us this day our daily bread (i.e., food),

England (i.e., the English cricket eleven) won the first test match against Australia

In our paper we will be addressing the issues regarding figures of speech like Smile, Metaphor, Oxymoron, Metonymy, Synecdoche as these are the most commonly used of all figures of speech in daily life.

## 4 PROPOSED SYSTEM

In proposed system we try to first find out type of figure of speech used in statement if any. This can be done with help of some format each figure of speech display like Simile uses words like, as or so before Noun, which gives an adjective effect to noun. In Metaphor opinion holders use words like was a, is a before Noun, which again gives an adjective effect to noun. In contrast figure of speech we use two opposite adjectives one after other. In association like in Metonymy a noun is replace by other noun or proper noun associated with it. In Synecdoche a noun is replace by noun having larger or smaller meaning of same context.

We propose to define following predefined lists for extracting

meaning of figure of speech, viz,

For association Noun-Adjective association mapping list:

Tiger = { Brave, Cruel, King }

Cucumber = {cool}

Crystal = {Clear}

So whenever a noun comes after keywords like as, like, was a, is a we will give adjective for corresponding noun. We have identified currently about 50 commonly used nouns that are used as adjectives in day to day life.

For contradiction:

Adjective pairs :

Kind (+ ve ) Cruelty (-ve)

In such cases we will give sentiment orientation of first adjective to the statement.

Associated names list:

Loksabha = {house, parliament}

Judges = {Bench}.

Here whenever as associated word will come in the same context will be treated as its original parent word.

Our said method will be divided into four steps. In step one we will do pre-processing on statements to remove unwanted symbols, stop words. Then in second step we do parts of speech tagging to match format of some specific figure of speech. In third step we will add extra adjectives, nouns associated to certain noun. And in last step we will try to predict sentiment of the statement whether it is positive, negative or neutral.

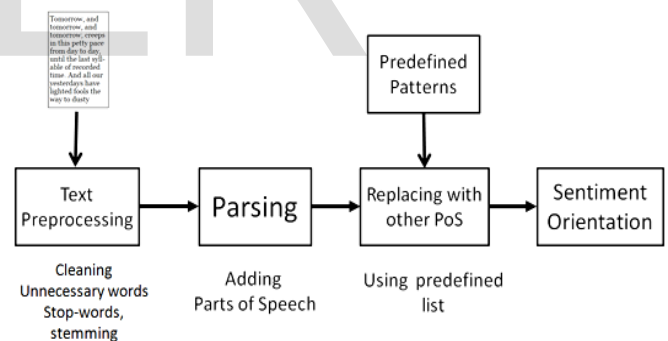


Fig. Proposed System

Mathematical model:

$S = \{I, Fu, P_T, A, O, Su, FL\}$

$I = \text{TEXT INPUT}$

$Fu = \{F_1, F_2, F_3\}$

$F_1 = \text{PREPROCESSING FUNCTION}$

$F_2 = \text{FUNCTION RECOGNIZE FIGURE OF SPEECH IF ANY.}$

$F_3 = \text{FUNCTION TO MAP ASSOCIATED ADJECTIVES WITH NOUNS}$

$P_T = \text{PREPROCESSED TEXT}$

$O = \text{POSITIVE OR NEGATIVE ORIENTATION OF SENTENCE}$

$Su = \text{SENTIMENT FROM FIGURE OF SPEECH CORRECTLY DETECTED}$

FL = CANNOT DETECT PROPER SENTIMENT IN FIGURE OF SPEECH

## 5 CONCLUSION

We experimented about over 100 sentences having figures of speech for opinion orientation on [sentistrength.wlv.ac.uk](http://sentistrength.wlv.ac.uk), a popular site which gives sentimental orientation to a sentence by giving it positive strength and negative strength. In all cases our system provided a better detection of opinions in such sentence having figures of speech.

Use of this methods will greatly enhance the opinion and sentiment analysis of current system as there are opinion, comments and reviews containing figures of speech. This will also help in sentiment analysis of comparative statements and statements having indirect references to other things.

## REFERENCES

- [1] English Grammar and Composition by Wren and Martin.
- [2] Classification of Opinion Mining Techniques. International Journal of Computer Application Volume. 56, October 2012 by N. Mishra and C.K. Jha.
- [3] Sentiment Analysis and Opinion Mining : A Survey . International Journal of Advance Research in Computer Science and Software Engineering. Volume 2, June 2012 by G.Vinodhini and R.M.Chandrasekaran.
- [4] Opinion Mining by Bing Liu, University of Illinois at Chicago, 2007.
- [5] A Novel Approach for Emotion Classification based on Fusion of Text and Speech. 19th International Conference on telecommunication 2012 by Ali Houjeji, LaylaHamieh, Nader Mehdi.
- [6] Text Mining : Advancements, Challenges and Future Directions. International journal of reviews in Computing 2010. By Mahesh T R, Suresh M B.
- [7] J. Does it matters what they said? A text Mining analysis. 13 ACIS International conference on Software Engineering, Artificial Intelligence 2012 by Steven Crockett and Carl Lee.