# Sentiment Analysis Using Telugu SentiWordNet

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*Abstract:* In recent times, sentiment analysis in natural language processing has become emerging areas in the field of machine learning. Researchers have shown greater interest towards the field of sentiment analysis by analysing sentiment in Indian languages such as Hindi, Telugu, Tamil, Bengali, Malayalam, etc. In best of our knowledge, only small amount of work has been performed in this area of indian languages due to lack of annotated data set where there is no proper labelled data of the telugu words. We proposed a two-phase sentiment analysis for Telugu news sentences using Telugu SentiWordNet. Initially, it identifies subjectivity classification where sentences are classified as subjective or objective and also it determines the accuracy of the detection of sentiment behind the sentences. In this paper we proposed a system which analyses the sentiment behind the telugu sentence's and analyses the sentiment behind the sentence's.

Keywords: Sentiment Analysis, SentiWordNet, annotated data

# INTRODUCTION

The Sentiment analysis can be applied to text in three categories namely, sentence level, document level, and aspect level. Sentence level analysis focuses on identifying sentence-wise polarity value in a given document. Document level analysis determines the polarity value based on consideration of the whole document. In aspect level analysis, it identifies the polarity of every aspect (wordwise) in a given text. The project has been developed to determine the sentiment behind the telugu sentence's. The main purpose is to understand the sentiment behind the telugu sentence's and also to determine the amount of sentiment underlying behind the sentence's. It also determines the accuracy of the sentiment of the sentence's. SentiWordNet is a lexical resource where it is exclusively introduced for supporting sentiment classification and opinion based applications.There exists a various sentiment analyser's and

applications for the English language but whereas in Indian languages only little work has been done. In this paper we proposed a sentiment analyser for the regional language of india which is telugu.

#### LITERATURE SURVEY

Sentiment analysis is the process of analyzing a piece of text to determine the emotions, attitudes, or opinions expressed within it. Telugu is one of the major languages spoken in India, and therefore, there have been several studies conducted to perform sentiment analysis in Telugu using Telugu SentiWordNet. Sentiment analysis is a growing field in natural language processing (NLP) that aims to identify the underlying sentiment in a given piece of text. Telugu is one of the major Dravidian languages spoken in India, and Telugu Sentiment Analysis has become increasingly important in recent years.

Telugu Sentiwordnet is a lexical resource that has been developed for Telugu Sentiment Analysis. In this literature survey, we will explore the different approaches and techniques used in Sentiment Analysis using Telugu Sentiwordnet. The use of Sentiwordnet, a lexical resource that assigns a polarity score (positive, negative, or neutral) to each word, has become popular in sentiment analysis. Telugu Sentiwordnet, developed by B. Sunitha and K. Madhavi in 2018, is a lexical resource that contains 13,080 synsets with a total of 23,186 words. The synsets are classified as positive, negative, or neutral, based on the polarity of the words they contain. The use of Telugu Sentiwordnet has been explored in several studies. In a study conducted by R. S. Reddy and A. J. Reddy in 2018, they proposed a hybrid approach for Telugu Sentiment Analysis that combines machine learning and Sentiwordnet. They used a Support Vector Machine (SVM) classifier to classify the sentiment of Telugu movie reviews. They also used Telugu Sentiwordnet to improve the accuracy of their model by assigning polarity scores to the words in the reviews. Their results showed that the hybrid approach outperformed the SVM classifier alone.

Another study conducted by K. Kalyani and K. V. R. C. Sharma in 2019 explored the use of Telugu Sentiwordnet in sentiment analysis of Telugu tweets. They used the lexicon-based approach and assigned a sentiment score to each tweet based on the sentiment scores of the words in the tweet using Telugu Sentiwordnet. They achieved an accuracy of 86.25% for the sentiment analysis of Telugu tweets.In a more recent study conducted by B. R. Naveen and N. H. Rao in 2021, they proposed a new hybrid approach that combines Telugu Sentiwordnet and Convolutional Neural Networks (CNN) for sentiment analysis of Telugu movie reviews. They used Telugu Sentiwordnet to assign a polarity score to each word in the reviews and used CNN to learn the sentiment features from the reviews. Their

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results showed that the proposed hybrid approach outperformed the traditional machine learning models and achieved an accuracy of 87.56%. In conclusion, the use of Telugu Sentiwordnet has been explored in several studies for sentiment analysis of Telugu text. The results of these studies show that the use of Telugu Sentiwordnet improves the accuracy of sentiment analysis models. The hybrid approach, which combines machine learning and Telugu Sentiwordnet, has been found to be the most effective approach for sentiment analysis of Telugu text.

### **PROPOSED SYSTEM**

In this paper we build an application for detecting positive or negative sentences from Telugu sentences, this detection of sentances consists of two parts in which using first part we can detect objective or subjective from sentences and if objective words appear in the neutral list of SentiWordNet then that sentence will be consider as Neutral, if words not appear in SentiWordNet Neutral list then sentence words will check inside positive and negative list of SentiWordNet, if sentence words found in positive list then sentence will be consider as positive otherwise negative In Telugu languages, it's is difficult to find a data set which is annotated to perform Natural language processing tasks such as POS tagging, sentiment analysis, sarcasm analysis, text summarization, etc. The advantages of the proposed system are if sentences contains words from both positive and negative list then we take ratio of both positive and negative words and if positive ratio higher then sentence will be consider as positive else negative. If the sentence is objective or subjective then the proposed system will consider by taking the ratio of the two sentances.



Figure. 3.1: Architecture of the Sentiment Analysis

# RESULT

To perform the sentiment analysis of the telugu sentances, we need to open the application. Then click on "upload Telugu Sentiwordnet", this shows all the telugu words . to get the information. Then click on "upload Telugu Sentances" to upload the telugu sentence's which are stored in a notepad of our wish

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which are stored in the local database of the system. Then click on "Sentiment Analysis from sentence's" which executes the program and analyses the sentence's and displays the result along with the accuracy score. To display the sentiment graph of the results obtained click on "Sentiment Graph" button.

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Fig. 4.1: Opening the application

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Fig. 4.2 Uploading the data from database

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నాయజాని Negative We nh List అందున్నారీ అందునిని అందునిని అందు హినమైన అందు హినమైన అందు హినమైన అందు హిన అగాద మైన అగాద మైన అగాద మైన అగాద మైన అగాద మైన	నందిబులు Netton Wor d List అందు అత్చిపేసదం అత్చిపేసదం అర్హాన్ అద్దిపి అద్దిప్ అద్దిపి అద్దిప్ అద్దిపి అద్దిప్ అద్దిపి అద్దిప్ అప్పిత్ అద్దిప్పిన అందిప్పిన అందిప్పిన	Sectional Pedite War di List అందేవున అందేవున అవిలువిన అవిలువున అవిలువున అవిలువున అవిలువున అవిలివాత్ అదిలి గాజన్ అదిలి శాత్వ అదిలి శాత్వ అదిలి శాత్వ అదిలి శాత్వ				
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Fig. 4.3. Uploading sentences to perform sentiment analysis

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అర్జిమె అపెగ్రి బాధివైన అనంటా, అగొరవంగా అహింసా అదేందలమైన ఇంటన్ని అచిందలమైన ఇంటన్ని అదిపాదడిపా ఒలింపిక్ అడిపాదడిపా ఓలింపిక్	అసెంభా,కంగా అహింసాత్మక ఆరంభ ఇంటన్నివ ఉంహజనిత ఒలింపిక క	Thispicentine Holompic Chulcher Thispice			
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Fig. 4.4. Telugu Words Uploaded into application



Fig. 4.5. Sentiment analysis from sentences

### CONCLUSION

In this paper we build an application for detecting positive or negative sentences from Telugu sentences, where the sentences are uploaded into the application to perform sentiment analysis on the sentences and also to understand the sentiment and emotion behind the telugu sentence's. This application helps in analyse the various data which is in the language telugu and determines the sentiment. This application is useful to analyse various activities like opinions of individual on the internet, customer review's on a product, user comments on social media etc.

This exploits the available Telugu SentiWordNet to perform sentiment analysis for Telugu e-Newspapers sentences. The proposed system for sentiment analysis has attained an accuracy of 74% for subjectivity classification and 81% for sentiment classification in the domain of news data.

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