

Sarcasm Detection: A Comparative Study

Abstract

- 1 Multimodal systems pose a challenging issue for sarcasm detection because they must understand complementing cues from various modalities, like audio, visual, and contextual information, in addition to text. In order to improve the accuracy of identifying sarcastic utterances, this study investigates a multimodal method to sarcasm detection that combines text, facial expressions, tone of voice, and situational context. The system may comprehend the difference between literal and intended meaning more clearly by combining different modalities, which is important for sarcasm recognition. Multimodal approaches perform much better than text-only models, according to the research, which contrasts multimodal systems with standard text-based methods. The system integrates and combines data from several sources using deep learning techniques including convolutional neural networks (CNNs) and recurrent neural networks (RNNs).
- 2 Experiments conducted on multimodal datasets yielded better results in performance metrics including F1-score, accuracy, and precision, highlighting the significance of non-verbal cues for accurate sarcasm identification. According to the results, multimodal systems have potential for more complex sentiment analysis, especially in real-world contexts where social media analysis and conversational agents are involved.

Introduction :-

Sarcasm identification is important for sentiment analysis and social media monitoring, hence it has become a crucial problem in natural language processing (NLP). Sarcasm is characterized by the statement of a meaning that deviates from the literal interpretation, and is hard for typical text-based models to detect correctly. Although a number of methods for sarcasm identification have been put forth, many of them only take into account textual data, which frequently ignores important non-verbal clues like tone, context, and facial expressions [1]. Promising answers to this problem can be found in the latest developments in multimodal systems and deep learning. Text, auditory, and visual inputs are combined by multimodal sarcasm detection systems to better capture the subtle signals that indicate sarcasm [2].

These systems seek to address the drawbacks of single-modality systems, which are frequently subject to misunderstanding, by including non-verbal cues [3]. This study demonstrates the efficacy of combining modalities for sarcasm detection by analyzing various multimodal techniques and comparing their performance to text-only models. The remainder of this essay is structured as follows: A review of related work is given in Section 2, the suggested approach is covered in Section 3, and the experimental results are shown in Section 4. Section 5 concludes with an overview of future paths and conclusions.

Conclusion :-

The past few years have seen a notable increase in interest in sarcasm detection studies, which warrants further study. The methods for automatically detecting sarcasm in text are the main topic of this essay. The use of hashtag-driven supervised learning to create annotated datasets, semi-supervised pattern extraction to detect implicit sentiment, and the use of extra-textual information as context (such as user characteristic profiling) are the three main paradigms in the history of sarcasm detection research.

While statistical approaches use features such as sentiment shifts, particular semi-supervised patterns, etc., rule-based systems try to capture any hint of sarcasm in the form of rules.

Additionally, con-text has been incorporated using deep learning approaches, such as the discussion themes and extra stylometric aspects of the writers in the chats. The scornful aspect of sarcasm is the foundation for an underlying theme in these previous approaches, whether it be in terms of features or norms. New methods of integrating contextual knowledge have also been investigated; these have mostly focused on the path that language models are beginning to take.