SENTIMENT CLASSIFICATION WITH CONTEXTUAL ANALYSIS ON GAME REVIEWS USING NATURAL LANGUAGE PROCESSING

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Abstract

The increasing popularity of gaming has led to a significant increase in the volume of game reviews, making it challenging for game developers and players to monitor the sentiment associated with a particular game. Sentiment analysis has grown in popularity as a method for determining the sentiment connected with a piece of text, such as game reviews. Even though sentiment analysis is widely used, issues such as use of negative terminologies, and game context aware reviews are gaps that needed to be filled in this domain and a valid approach is needed for this.

The proposed methodology involves utilizing BERT (Bidirectional Encoder Representations from Transformers) with ensemble method to get polarity of reviews using a contextual analysis approach. To further analyze the context of reviews a BiLSTM layer and a CNN layer was added on top of the BERT. Creating an ensemble method to improve the overall accuracy of the sentiment classification will be discussed in this research. The approach is evaluated using a dataset of game reviews from Steam, a popular online gaming platform.

This study advances the field of sentiment analysis and shows how transformer-based hybrid models perform well in NLP applications. The results of the experiments show that the suggested methodology works superior to traditional sentiment analysis methods and achieves high accuracy in identifying the sentiment of game reviews by achieving accuracy of 90% and f1-score 0f 0.9080.

Keywords: Sentiment Analysis, Contextual Sentiment, Natural Language Processing, Game Reviews, Transformers