

ABSTRACT

The rapid growth of the digital game industry has driven an increasing number of user reviews, especially on the Steam platform. These reviews contain diverse and unstructured opinions, making them difficult to analyze manually. Therefore, a system is needed that is able to classify sentiment from user reviews automatically. The input from the system is in the form of review text, while the output is a positive or negative sentiment class.

Sentiment analysis in game reviews is very important for developers and potential players to understand user perceptions. However, conventional approaches are still limited in understanding the context and hidden meaning of natural language used in reviews. This creates a gap between the methods used today and the need for a more accurate and contextual understanding of user opinions.

The proposed solution is to build a large language model-based sentiment classification system using three different architectures, namely BERT, RoBERTa, and DistilBERT. Review data was collected from five popular RPG game titles and went through a manual annotation process. The system stages include data collection, preprocessing, data sharing, model training and validation, and performance evaluation. In addition, domain-specific lexicon analysis and RPGSentiLex development were carried out to evaluate the ambiguity of the meaning of words frequently used in game reviews.

Experiments show that RoBERTa performs best with the highest F1 score of 97.50%, followed by BERT and DistilBERT. Other findings show that excessive preprocessing such as lemmatization and stopword removal actually decrease the model accuracy. This study shows the importance of context modeling and preprocessing minimization in large language model-based sentiment classification.

Keywords: sentiment analysis, game reviews, natural language, classification, large language model, steam