

Abstract

Watching movies is a popular activity enjoyed by many individuals. Netflix is a leading entertainment platform that offers a vast selection of movies. This research aims to enhance the recommendation system by integrating Content-Based Filtering (CB) with Long Short-Term Memory (LSTM) and Bidirectional Long Short-Term Memory (Bi-LSTM) to assist users in discovering movies that align with their preferences. Additionally, three algorithms were used to optimize each method with the most suitable parameter to determine the appropriate method for this data. This research aims to evaluate the optimization's performance using the optimal parameter for each method. Several scenarios have been run using 854 movies and 34,086 movie reviews provided by 44 active Twitter users. The study's results indicate that the movie recommendation system that utilizes CB with LSTM classification, applying SMOTE and SGD optimization, achieves the highest accuracy of 87.28%. This represents an increase of 13.88% over the baseline. Additionally, the highest accuracy of 87.28% was achieved through Bi-LSTM classification using SMOTE and SGD optimization, representing a significant increase of 13.99% over the baseline. This demonstrates that CB can be combined with LSTM and Bi-LSTM to achieve high accuracy and improved results.

Keywords: LSTM, Bi-LSTM, Recommendation System, Content-Based Filtering, Optimization