

ABSTRACT

*The increasing number of reviews on platforms such as Google Maps makes it difficult for users to find relevant restaurant recommendations. Conventional methods such as Word2Vec, Bag of Words, lexical analysis, and TF-IDF often fail to capture the context of subjective reviews, while deep learning approaches such as CNN-LSTM are prone to overfitting and require high computational resources. In addition, some recommendation systems focus solely on individual behavior without considering the interaction between users and items. To address these limitations, this study proposes a hybrid restaurant recommendation system that combines sentiment analysis, feature-based, and item-based collaborative filtering. The system leverages a pre-trained Word2Vec model from the spaCy library to represent reviews semantically. Each review is converted into a vector and averaged to form a restaurant representation, and the final score is calculated using a weighted combination of sentiment scores, feature similarity, and item similarity. Evaluation using the train-test split method (80:20) on more than 80,000 reviews from 339 restaurants shows an improvement in all performance metrics. The hybrid model without sentiment achieved a Hit Rate of **0.0300**, MRR of **0.0109**, and NDCG of **0.0128**, while the hybrid model with sentiment achieved a Hit Rate of **0.0777**, MRR of **0.0270**, and NDCG of **0.0352**. This improvement indicates that integrating sentiment analysis helps the system produce more relevant recommendations and rank restaurants higher in the recommendation list.*

Keywords: *hybrid recommender system, item-based collaborative filtering, feature-based, sentiment analysis, restaurant recommendation.*