Abstract

The rapidly growing video game industry presents significant challenges in recommending games from an increasingly vast catalog. Traditional Collaborative Filtering methods often face issues such as data sparsity and cold start. Handling the complexity of data and interactions between users and items is crucial, especially with the large number of games on platforms like Steam. This study introduces the Deep Learning Collaborative Recommender System (DLCRS), a deep learning-based approach designed to overcome the limitations of conventional methods. DLCRS leverages deep neural networks to capture complex interactions between users and games. The dataset includes game reviews and playtime data from Steam users in Australia. Binary ratings are generated using DistilBERT, and negative sampling techniques are applied to enhance model performance. Data is encoded with one-hot encoding and split into training, testing, and validation sets. Experimental results are compared with NCF, NFM, and DLRM methods. The findings indicate that DLCRS excels in accuracy and stability compared to other methods, achieving the highest Recall of 0.8599 and an F1-Score of 0.8199, making it a promising candidate for game recommendation systems.

Keywords: recommender systems, deep learning, Collaborative Filtering, video games