Abstract

The gaming industry has seen dramatic shifts in recent decades. The variety of games available and the number of people who play them have exploded due to the growth of online communities dedicated to this kind of entertainment. The difficulty of keeping up with the always-changing preferences of players and the constant stream of new video games is a challenging problem. Although several video game recommender systems have been presented, the algorithm used has difficulties recording changes in user's preferences, leading to a repetition of recommended games. Therefore, a recommender system that actively learns from user behavior and personalizes its recommendations accordingly. We propose developing video game recommendations based on Deep Reinforcement Learning (DRL). The deep reinforcement learning algorithm uses data from Steam platform and user past interactions, such as playtime forever and playtime in the past 2 weeks, to provide future rewards for video game recommendations. We compared the experiment on DRL variance with Singular Value Decomposition (SVD) and Logistic Regression (LR). The results indicate that the proposed method consistently assesses the item's importance and relative ranks based on user's past interactions.

Keywords: recommender system, deep reinforcement learning, double q learning, video game, steam platform