

## Application of Artificial Immune Systems Combined with Collaborative Filtering in Movie Recommendation System

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**Abstract :** This research combines artificial immune system with user and item based collaborative filtering to create an efficient and accurate recommendation system. By applying the characteristic of antibodies and antigens in the artificial immune system and using Pearson correlation coefficient as the affinity threshold to cluster the data, our collaborative filtering can effectively find useful users and items for rating prediction. This research uses MovieLens dataset as our testing target to evaluate the effectiveness of the algorithm developed in this study. The experimental results show that the algorithm can effectively and accurately predict the movie ratings. Compared to some state of the art collaborative filtering systems, our system outperforms them in terms of the mean absolute error on the MovieLens dataset.

**Keywords :** artificial immune system, collaborative filtering, recommendation system, similarity

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