

ABSTRAK

Perkembangan layanan streaming film menyebabkan pengguna dihadapkan pada jumlah pilihan film yang sangat banyak sehingga sering mengalami kesulitan dalam menemukan film yang sesuai dengan preferensi mereka. Sistem rekomendasi menjadi salah satu solusi untuk membantu pengguna memperoleh rekomendasi film yang relevan berdasarkan riwayat interaksi dan penilaian yang telah diberikan. Penelitian ini bertujuan untuk mengimplementasikan metode Item-Based Collaborative Filtering (IBCF) dalam pembangunan sistem rekomendasi film menggunakan dataset MovieLens serta mengevaluasi kinerja sistem yang dihasilkan. Metode Item-Based Collaborative Filtering digunakan untuk menghitung tingkat kemiripan antar film berdasarkan pola rating pengguna. Proses penelitian meliputi tahap preprocessing data, pembentukan matriks user-item, perhitungan kemiripan antar film menggunakan Cosine Similarity, prediksi rating, dan pemberian rekomendasi Top-N. Sistem dikembangkan berbasis web menggunakan bahasa pemrograman Python dan dievaluasi menggunakan metrik Mean Absolute Error (MAE), Root Mean Square Error (RMSE), Precision, Recall, dan Coverage. Selain itu, dilakukan pengujian beta menggunakan kuesioner untuk mengukur tingkat usability sistem dari sisi pengguna. Hasil penelitian menunjukkan bahwa sistem rekomendasi yang dibangun mampu menghasilkan rekomendasi film yang relevan dengan nilai MAE sebesar 1,7762, RMSE sebesar 2,1062, Precision sebesar 73,09%, Recall sebesar 74,53%, dan Coverage sebesar 73,99%. Hasil pengujian beta memperoleh nilai rata-rata sebesar 80,17% yang termasuk dalam kategori baik. Berdasarkan hasil tersebut, metode Item-Based Collaborative Filtering dapat diimplementasikan dengan baik pada sistem rekomendasi film dan mampu memberikan rekomendasi yang sesuai dengan preferensi pengguna.

Kata Kunci: Sistem Rekomendasi, Item-Based Collaborative Filtering, MovieLens, Cosine Similarity, Rekomendasi Film.

ABSTRACT

The rapid growth of movie streaming services has resulted in users being exposed to a vast number of movie choices, making it difficult to find films that match their preferences. Recommendation systems have become an effective solution to assist users in obtaining relevant movie recommendations based on their interaction history and ratings. This research aims to implement the Item-Based Collaborative Filtering (IBCF) method in developing a movie recommendation system using the MovieLens dataset and to evaluate the performance of the resulting system. The Item-Based Collaborative Filtering method is used to calculate similarities among movies based on user rating patterns. The research process includes data preprocessing, user-item matrix construction, movie similarity calculation using Cosine Similarity, rating prediction, and Top-N recommendation generation. The system was developed as a web-based application using Python and evaluated using Mean Absolute Error (MAE), Root Mean Square Error (RMSE), Precision, Recall, and Coverage metrics. In addition, beta testing was conducted using questionnaires to measure the usability level of the system from the users' perspective. The results show that the developed recommendation system is capable of generating relevant movie recommendations with an MAE value of 1.7762, RMSE of 2.1062, Precision of 73.09%, Recall of 74.53%, and Coverage of 73.99%. The beta testing achieved an average score of 80.17%, which falls into the good category. Based on these results, the Item-Based Collaborative Filtering method can be effectively implemented in a movie recommendation system and is capable of providing recommendations that match user preferences.

Keywords: Recommendation System, Item-Based Collaborative Filtering, MovieLens, Cosine Similarity, Movie Recommendation.