

ABSTRAK

Penelitian ini membahas penerapan metode *hybrid* dalam sistem rekomendasi musik berbasis *audio feature* berdasarkan emosi pendengar. Sistem ini menggabungkan dua metode utama, yaitu *Content-Based Filtering* (CBF) dan *Collaborative Filtering* (CF), untuk meningkatkan akurasi dan relevansi rekomendasi musik. CBF digunakan untuk menganalisis kesamaan karakteristik lagu berdasarkan fitur audio, sementara CF mengevaluasi pola interaksi pengguna untuk menemukan kesamaan preferensi.

Metode *hybrid* yang diterapkan dalam penelitian ini menggabungkan kedua pendekatan dengan pendekatan *weighted hybrid*. Hasil evaluasi menggunakan metrik *Mean Squared Error* (MSE), *Root Mean Squared Error* (RMSE), dan *Mean Absolute Error* (MAE) menunjukkan bahwa model *hybrid* memiliki kinerja yang lebih optimal dibandingkan metode tunggal. *Collaborative Filtering* memiliki RMSE sebesar 0.5831 dan MAE 0.22, sementara *Content-Based Filtering* memiliki RMSE 1.1467 dan MAE 0.538. Model *hybrid* menghasilkan RMSE sebesar 0.8735 dan MAE 0.69, yang menunjukkan keseimbangan antara pemanfaatan informasi konten lagu dan interaksi pengguna.

Dengan hasil tersebut, sistem rekomendasi musik berbasis *hybrid* dapat memberikan rekomendasi yang lebih akurat dan relevan berdasarkan emosi pendengar. Penelitian ini diharapkan dapat menjadi dasar pengembangan lebih lanjut dalam sistem rekomendasi berbasis kecerdasan buatan.

Kata kunci: sistem rekomendasi musik, *hybrid* model, *content-based filtering*, *collaborative filtering*, *audio feature*, emosi pendengar.

ABSTRACT

This research discusses the application of the hybrid method in an audio feature-based music recommendation system based on listener emotions. This system combines two main methods, namely Content-Based Filtering (CBF) and Collaborative Filtering (CF), to increase the accuracy and relevance of music recommendations. CBF is used to analyze the similarity of song characteristics based on audio features, while CF evaluates user interaction patterns to find similarities in preferences.

The hybrid method applied in this research combines both approaches with a weighted hybrid approach. Evaluation results using the Mean Squared Error (MSE), Root Mean Squared Error (RMSE), and Mean Absolute Error (MAE) metrics show that the hybrid model has more optimal performance than the single method. Collaborative Filtering has an RMSE of 0.5831 and an MAE of 0.22, while Content-Based Filtering has an RMSE of 1.1467 and an MAE of 0.538. The hybrid model produces an RMSE of 0.8735 and an MAE of 0.69, which indicates a balance between the utilization of song content information and user interaction.

With these results, a hybrid-based music recommendation system can provide more accurate and relevant recommendations based on listeners' emotions. It is hoped that this research can become the basis for further development in artificial intelligence-based recommendation systems.

Keywords: music recommendation system, hybrid model, content-based filtering, collaborative filtering, audio features, listener emotions.

