

ABSTRAK

Keberagaman judul dan genre anime yang sangat luas menimbulkan tantangan bagi pengguna dalam menentukan tontonan yang sesuai dengan preferensi mereka. Penelitian ini bertujuan untuk membangun sistem rekomendasi anime berbasis web menggunakan metode Item Based Collaborative Filtering dan *Popularity-Based* dengan mekanisme *switching hybrid* untuk mengatasi permasalahan *cold start* pada pengguna baru. Sistem dibangun menggunakan framework Flask dengan dataset yang diperoleh dari Kaggle terdiri dari 342 anime dan 23.794 data rating. Metode *Item Based Collaborative Filtering* menghitung kemiripan antar anime menggunakan *Cosine Similarity* berdasarkan pola rating pengguna, kemudian memprediksi rating menggunakan rumus *weighted sum*. Apabila pengguna belum memiliki riwayat rating (*cold start*), sistem secara otomatis beralih menggunakan metode *Popularity-Based* yang mengurutkan anime berdasarkan nilai *Weighted Rating* (WR). Evaluasi sistem hanya dilakukan pada metode Item Based Collaborative Filtering menggunakan metrik *Mean Absolute Error* (MAE) dengan metode *K-Fold Cross Validation* (3, 5 dan 7 fold) serta variasi nilai K yaitu 5, 10, 15, 20, 25 dan 30. Hasil eksperimen menunjukkan bahwa nilai K=10 secara konsisten menghasilkan rata – rata MAE terkecil pada seluruh variasi fold, dengan nilai rata – rata MAE sebesar 0,7967 pada 7-fold.

Kata Kunci: sistem rekomendasi, anime, *Item-Based Collaborative Filtering*, *Popularity-Based*, *switching hybrid*, *Cosine Similarity*, MAE

ABSTRACT

The wide variety of anime titles and genres poses a challenge for users in finding content that matches their personal preferences. This study aims to develop a web-based anime recommendation system using *Item-Based Collaborative Filtering* and *Popularity-Based* methods with a *switching hybrid* mechanism to address the *cold start* problem for a new users. The system was developed using the Flask framework with a dataset obtained from Kaggle consisting of 342 anime and 23,794 rating data. The *Item-Based Collaborative Filtering* method calculates the similarity between anime using *Cosine Similarity* based on user rating patterns, the predict ratings using a *Weighted Sum* formula. When a user has no rating history (*cold start*), the system automatically switches to the *Popularity-Based* method, which ranks anime based on the Weighted Rating (WR) score. The system was evaluated exclusively using the Item Based Collaborative Filtering method, with *Mean Absolute Error* (MAE) as the evaluation metric with *K-Fold Cross Validation* (3, 5 and 7 folds) and K values of 5, 10, 15, 20, 25, and 30. The experimental results show that K=10 consistently produces the smallest average MAE across all fold variations, with an average MAE of 0,7967 on the 7-fold.

Keywords: recommendation system, anime, *Item-Based Collaborative Filtering*, *Popularity-Based*, *switching hybrid*, *Cosine Similarity*, MAE.