

ABSTRAK

Perkembangan industri film digital memberikan kemudahan akses tayangan, namun kuantitas yang besar sering kali menyulitkan pengguna dalam memilih film yang sesuai preferensi. Sistem rekomendasi hadir sebagai solusi, namun masih menghadapi masalah *item cold start*, yaitu ketidakmampuan merekomendasikan film baru akibat ketiadaan riwayat interaksi pengguna. Penelitian ini bertujuan mengatasi masalah tersebut menggunakan pendekatan *Cascade Hybrid Filtering* yang mengombinasikan *Collaborative Filtering* (CF) dan *Content-Based Filtering* (CBF). Tahap awal menggunakan CF untuk mengekstraksi riwayat preferensi pengguna target guna membentuk profil berbasis komunitas (*similar users*) berdasarkan irisan genre dominan. Setelah semesta kandidat film dipersempit melalui *cascade filtering*, CBF diterapkan dengan pembobotan *Term Frequency-Inverse Document Frequency* (TF-IDF) pada metadata tekstual dan tingkat relevansinya diukur menggunakan *Cosine Similarity*. Optimasi parameter melalui *Grid Search* menunjukkan fitur *tags* (70%) dan *genre* (30%) berkontribusi paling dominan. Hasil evaluasi Top-10 pada simulasi *item cold start* membuktikan akurasi model bergantung pada kesesuaian metadata film terhadap preferensi komunitas. Pada film yang selaras, model berkinerja sangat efektif dengan *Hit Rate@10* mencapai 1.0000 (100%), *Mean Reciprocal Rank* (MRR)*@10* sebesar 0.9000, dan *Normalized Discounted Cumulative Gain* (NDCG)*@10* sebesar 0.9000. Pengujian perangkat lunak (*Black Box Testing*) mengonfirmasi seluruh fungsionalitas sistem berjalan baik. Disimpulkan bahwa pendekatan *Cascade Hybrid Filtering* dapat diandalkan untuk mengatasi permasalahan *item cold start* tanpa memerlukan riwayat interaksi, selama metadata film baru tersebut memiliki relevansi dengan minat komunitas pengguna target.

Kata Kunci: Sistem Rekomendasi, *Item Cold Start*, *Cascade Hybrid Filtering*, TF-IDF, *Cosine Similarity*.

ABSTRACT

The development of the digital film industry provides easy access to movies, but the massive quantity often makes it difficult for users to choose films that suit their preferences. Recommender systems offer a solution but struggle with the item cold start problem, specifically the inability to recommend new movies lacking interaction history. This study addresses this issue by applying Cascade Hybrid Filtering, combining Collaborative Filtering (CF) and Content-Based Filtering (CBF). Initially, CF is used to extract the target user's preference history to build a community-based profile (similar users) based on the intersection of dominant genres. After narrowing candidate films via cascade filtering, CBF applies Term Frequency-Inverse Document Frequency (TF-IDF) weighting to textual metadata, measuring relevance using Cosine Similarity. Grid Search optimization revealed that tags (70%) and genre (30%) features contribute most dominantly. Top-10 evaluation results on item cold start simulations indicate that the model's accuracy heavily depends on the alignment between film metadata and community preferences. For relevant films, the model is highly effective, achieving a Hit Rate@10 of 1.0000 (100%), Mean Reciprocal Rank (MRR)@10 of 0.9000, and Normalized Discounted Cumulative Gain (NDCG)@10 of 0.9000. Black Box Testing confirmed proper system functionality. It is concluded that the Cascade Hybrid Filtering approach is reliable for overcoming the item cold start problem without requiring interaction history, provided the new film's metadata aligns with the target user community's interests.

Keywords: Recommender System, Item Cold Start, Cascade Hybrid Filtering, TF-IDF, Cosine Similarity.