ABSTRACT

Technological advancement has triggered a data explosion, leading to information overload. Recommender systems have emerged as a solution, but still face challenges such as data sparsity and the cold-start problem. Hybrid filtering addresses these by integrating collaborative filtering and content-based filtering methods. While recommendation models dominate e-commerce and film domains, their application in book recommendations, particularly for user cold-start scenarios, remains limited and underexplored. This study proposes a performance analysis of hybrid filtering for book recommendations under user cold-start conditions. The dataset used is BookCrossing, which includes user interactions, user metadata, and book metadata, supplemented with data from the OpenLibrary API. The model is trained using the WARP loss function with the best configurations for features, embedding dimensions, and learning rate, to maximize AUC, precision@10, hit rate@10, and coverage. Hybrid filtering achieved the best model performance with an AUC of 0.8039, precision@10 of 0.2261, hit rate@10 of 0.8484, and coverage of 0.5761. These results indicate that the hybrid filtering method can effectively mitigate the user cold-start problem and provide relevant book recommendations.

Kata kunci : Recommendation model, book recommendation, hybrid filtering, user cold-start