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Coupling Web Usage Mining with Content Mining for Recommendation Systems

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Abstract: In this paper, we introduce a novel approach for combining web usage mining and content mining. The approach is based on generating recommendations that take into consideration users' navigation history as well as contents of pages visited. The integration of usage and content data can be performed at the offline phase or at the online phase of the recommendation system. The former is referred to as pre-mining integration; while the latter is called post-mining integration. The current work is concerned with pre-mining integration. The main rationales of the combination are to improve the quality of recommendations generated; overcome the new item problem and to improve the clustering of users' navigation patterns. In our experiments, the quality of clustering of user sessions is improved by 35% when compared with quality of clusters generated using usage patterns only. Also, the recommendations generated using the proposed approach are improved by 24% and 8% for the recall and precision respectively and when compared with recall and precision obtained by using usage data only.