

A New Approach in Query Expansion Methods for Improving Information Retrieval

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Abstract	<p>This research develops a new approach to query expansion by integrating Association Rules (AR) and Ontology. In the proposed approach, there are several steps to expand the query, namely (1) the document retrieval step; (2) the step of query expansion using AR; (3) the step of query expansion using Ontology. In the initial step, the system retrieved the top documents via the user's initial query. Next is the initial processing step (stopword removal, POS Tagging, TF-IDF). Then do a Frequent Itemset (FI) search from the list of terms generated from the previous step using FP-Growth. The association rules search by using the results of FI. The output from the AR step expanded using Ontology. The results of the expansion with Ontology use as new queries. The dataset used is a collection of learning documents. Ten queries used for the testing, the test results are measured by three measuring devices, namely recall, precision, and f-measure. Based on testing and analysis results, integrating AR and Ontology can increase the relevance of documents with the value of recall, precision, and f-measure by 87.28, 79.07, and 82.85.</p>
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