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Meta-Search Engine based on Query-Expansion using Latent Semantic Analysis and Probabilistic Latent Semantic Analysis.

Abstract

As the result of the rapid advancements in Information Technology, Information Retrieval on Internet (Internet -Searching) is gaining importance, day by day. Search-Engines are admittedly essential tools for this purpose. But, like a two side of the same coin, search-engines' performance degrade due to some critical issues. This fact motivates for another solution-namely "Implementation of Meta- Search Engine".

This thesis presents an analysis of the applicability of the Probabilistic Latent Semantic Analysis technique for performing Query Expansion in the context of Meta Search Engines. The basic idea is to refine results using query-expansion. Our experiments clearly demonstrate that the technique gives excellent results for query expansion with distinct senses of the query keywords getting grouped in different topics. Moreover, the applied method converges very rapidly, thus providing an efficient and extremely pragmatic method for query expansion. We also compare our results with those obtained using Latent Semantic Analysis.

Keywords: Meta-Search Engine, Query-Expansion, Latent Semantic Analysis, Probabilistic Latent Semantic Analysis, Convergence.