



## Retrieval Ordering of Documents Using the Entropy Distribution by IPF Algorithm

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Lee and Kantor [JASIS, 1991, 1998] developed a formulation of the Maximum Entropy Principle (MEP) for Information Retrieval to estimate the effectiveness of term combinations to a specific query. The strong MEP asserts that the actual distribution of relevant and non-relevant documents across the collection of documents corresponds to the distribution generated by the MEP. The Rank MEP orders the possible term combinations in the most effective order for optimal retrieval. However, the MEP formulation is a nonlinear optimization problem which is not easy to solve and the work has had almost no impact. This paper proposes an iterative proportional fitting (IPF) algorithm to solve the MEP formulation constrained on user's judgments. Application of this model to OHSUMED database shows some promising results if expert judgments are close to actual relevance.

**Keywords:** Information Retrieval, Maximum Entropy Distribution, Iterative Proportional Fitting Algorithm