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# Transfer Learning for IR Model Parameter Tuning

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## Résumé

In this paper we study the problem of tuning the free parameters of standard IR models on collections without any relevance judgements, called target collections, utilizing collections with available relevance judgements, called source collections. The queries from source and target collections are mapped into a common vectorial space using a mapping kernel. The kernel mapping takes into account the representation of query words in their respective collections along with their semantic meaning. Then, standard regression techniques are deployed to learn the parameter values on a source collection which are later applied to obtain the values on the target collections. Our experiments on standard IR collections show that the proposed approach can efficiently tune the parameters of IR models query by query for new (unseen) target collections. Results also prove that the versions of the standard IR models we obtain outperform the versions with the default parameters and are on par with the versions where the parameter values are optimized over a set of queries using the target relevance judgements.

**Mots-Clés:** Learning IR Parameters, Transfer Learning

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