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Relevance Feedback within CBIR Systems

Authors : Mawloud Mosbah, Bachir Boucheham

Abstract : We present here the results for a comparative study of some techniques, available in the literature, related to the relevance feedback mechanism in the case of a short-term learning. Only one method among those considered here is belonging to the data mining field which is the K-Nearest Neighbours Algorithm (KNN) while the rest of the methods is related purely to the information retrieval field and they fall under the purview of the following three major axes: Shifting query, Feature Weighting and the optimization of the parameters of similarity metric. As a contribution, and in addition to the comparative purpose, we propose a new version of the KNN algorithm referred to as an incremental KNN which is distinct from the original version in the sense that besides the influence of the seeds, the rate of the actual target image is influenced also by the images already rated. The results presented here have been obtained after experiments conducted on the Wang database for one iteration and utilizing colour moments on the RGB space. This compact descriptor, Colour Moments, is adequate for the efficiency purposes needed in the case of interactive systems. The results obtained allow us to claim that the proposed algorithm proves good results; it even outperforms a wide range of techniques available in the literature.

Keywords : CBIR, category search, relevance feedback, query point movement, standard Rocchio’s formula, adaptive shifting query, feature weighting, original KNN, incremental KNN
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