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INCORPORATE FEATURE SPACE TRANSFORMATION TO CONTENT-BASED IMAGE RETRIEVAL WITH RELEVANCE FEEDBACK

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Abstract. *In recent years, the employment of feedback information to improve image retrieval precision has become a hot subject in the research field. But in traditional relevance feedback methods, both relevant and non-relevant assigned information were required for the retrieval system. For the sake of practicality and convenience,this paper assumes that users only need to label the images from the previous query as relevant, which generates a new vector as feedback information. Through the feature space transformation, it is an adjustment in the spatial resolution of the feature space. The spatial resolution around relevant samples is contracted.Meanwhile, the analysis of the user's intention together with relevant forecast of the interested objects in the database make it possible for the less similar vectors to get closer to the query vector and thus increasing query precision. In this paper,a prototype system is introduced of an image database and experimental illustration to 51,138 image files. Compared with the traditional relevance feedback approach, our method is shown to obviously improve the retrieval feedback performance.*

Keywords: CBIR, Image retrieval, Relevance feedback, Feature space transformation

1. **Introduction.** In recent years, with the rapid development of computer technology and the popularity of digital image equipment, there is an increasing number of digital image files. Thus, how to quickly and accurately retrieve image files has become an imperative problem to be solved. Therefore, image retrieval has become one of the hot subjects in the research field.

Traditional keyword-based retrieval is difficult to realize. With the emergence of large-scale image databases, artificial annotation is found to be a tremendously hard job. Meanwhile, the increasing number of image files and the influence of a marker's subjective consciousness also makes it difficult to assign correct annotations to each image file. In order