

Abstract

This final project describes a new method to develop image retrieval, especially in Content-Based Image Retrieval (CBIR), called Stochastic Paintbrush Transformation (SPT). It is an algorithm to transform the image into a painting representation (paintbrush).

SPT is chosen because it is completely automatic and it also can provide an interpretation of an image and capture its visual content. The image extraction on SPT is based on painting representation of the original image by using paintbrush stroke parameter features which includes shape, size, color, orientation, and location of the brush. This final project is divided into two subsystems. The first is data storage subsystem, which extracts the image paintbrush stroke features and store them into the database. Second, the query image retrieval subsystem matches the resulting paintbrush features of the query image and the resulting paintbrush features of all images from the database. This process results in N number of the database images which have some similarity levels to the query image. The similarity measurement of an image is obtained from similarity process based on color, orientation, and location parameter of the brush. Experimental analysis results show that the SPT method in CBIR system has a good performance system but not so good in image time transformation.

Keywords: image retrieval, Content-Based Image Retrieval (CBIR), Stochastic Paintbrush Transformation (SPT), paintbrush stroke parameter, brush, orientation, similarity.