Color Histogram Features Based Image Classification in Content-Based Image Retrieval Systems

Abstract:

In content-based image retrieval systems (CBIR) the most efficient and simple searches are the color based searches. Although this methods can be improved if some preprocessing steps are used. In this project one of the preprocessing algorithms, the image classification is analyzed. In CBIR image classification has to be computationally fast and efficient. In this project a new approach is introduced, which based on low level image histogram features. The main advantage of this method is the very quick generation and comparison of the applied feature vectors.

In content-based image retrieval systems (CBIR) is very useful and efficient if the images are classified on the score of particular aspects. For example in a great database the images can be divided into such classes as follows: landscapes, buildings, animals, faces, artificial images, etc. Many color image classification methods use color histograms. Feature vectors are generated using the Haar wavelet and Daubechies’ wavelet of color histograms. Another histogram based approach can be found, where the so-called blob world is used to search similar images. The aim of this project to develop such a color histogram based classification approach, which is efficient, quick and enough robust. In the interest of this I used some features of color histograms, and classified the images using these features. The advantage of this approach is the comparison of histogram features is much faster and more efficient than of other commonly used methods.