

Abstract

Content Based Image Retrieval (CBIR) is a novel technology that provide a 'search by image content' mechanism. CBIR works by measuring similarity between the query image and all images in database. This mechanism leads to a high query cost due to high numbers of image in database. Classifying images into classes in order to limit the query range could be a strategy to minimize CBIR's query cost.

This final project's goal is to implement K-Nearest Neighbor to classify landscape images. The accuracy and time of this classifier are measured as well. In this final project, a software which can be used to extract color and texture features from a landscape image is developed. Color and texture features are extracted using Color Histogram and Edge Histogram Descriptor respectively. Afterwards, the result of this feature extraction process is used in learning and classification process where K-Nearest Neighbor classifier is implemented. This software is developed through structured software engineering and implemented using Microsoft Visual Basic 6.0

Software is tested to measure the accuracy and classification time of K-Nearest Neighbor classifier. Test result shows that the accuracy of color and texture based classification outperform the accuracy of color based or texture based classification despite of more time required for classification.

Keyword: image classification, feature extraction, k-nearest neighbor