

ABSTRACT

Content Based Image Retrieval (CBIR) is a data retrieval technique based on image features or features such as shape, color, texture, keypoint or combination of features. In the CBIR system, features of the image will be extracted using feature extraction methods or features. To get the image feature, the user inputs the query image, then the system will extract the image and generate the image feature. The feature of the query image and image features in the database will be searched for its match value, the image that has the highest match value will be placed in the first place.

In this final project will be created a system capable of implementing feature extraction and measurement of image similarity. The method used is Principal Component Analysis (PCA) for image characteristic extraction and Genetic Algorithm method for image similarity measurement process. In a genetic algorithm, chromosomes are represented by heavy features. These chromosomes go into genetic operator processes such as selection, crossover, and mutations until the maximum generation is achieved. The results of the genetic algorithm process gain the optimum feature weight. Evaluation of retrieval used recall precision graphics. The results show that heavy duty features based on genetic algorithms can improve the average of precision in shooting.

From the results of performance testing Genetic Algorithm known that the smaller the number of generations the greater the accuracy, the higher the number of images the greater accuracy. The average accuracy achieved in this research is 100%, 100%, and 98.7% for each data.

Keywords: CBIR, Pricipal Component Analysis, Genetic Algorithm