ABSTRACT

Face detection is the first phase of human face recognition. Color is a feature appearing from human face. By using skin color as primitive feature to detect face region has some advantage for example in most of color processing are faster than other face feature processing.

To represent human face, it is done by skin segmentation phase based on skin color to segment skin region and non- skin region in color images. The result of segmentation phase will be analyzed by Connected Component Analysis phase to analyze relationship of skin region and to identificate face candidate. Furthermore, Eigenface is applied to define the significant features that represent a set of face pattern to be used to minimize non – skin region. The final phase is face detection phase using Template Matching method to compare image of face candidate with face template, then to convince the similarity level by computing the correlation value and to summarize whether face or non-face. The result is an image of human face and other information as number of detected face in input image, processing time, number of skin region.

In this final project, the testing is applied on 113 input images each of them, 73 for image with single photo and 40 for image with group photo. From the result data, the detection with three method gave 98,6% of success in detection for single photo and 57,5% for group photo.

Keywords : Face Detection, Eigenface, Connected Component Analysis, Segmentation, Template Matching, Skin Color