

Abstract

Eyes are the most important features in the human face. Basically, eye detection is a detection of eye position on an image data. Eye detection can be useful in Face Detection System or Face Recognition System. In this final project, it's discussed about an eye detection system which is combining projection function as a feature based method and template matching as a template based method.

Template matching is able to accurately identify a pattern but it is lack in terms of time. While the projection function is capable of searching a region quickly based on certain characteristics. By this combination, eye detection can be done by finding a rough area of eyes in advance using Projection Function method and then find the eye position precisely by using template matching method so that the eye detection can be done accurately and quickly.

In this final project was also discussed about moment invariant that used to normalize the face's orientation on the input image.

From tests performed on the facial image contained in The ORL Database of Faces, results show that the system accuracy is 76.2% and in terms of average execution time shows that the projection function able to speed up the process of eye detection up to 28 times.

Keywords: *eye detection, feature based method, template based method, projection function, template matching, moment invariant.*