

ABSTRACT

Face recognition system is a method of personal identification, in human-computer interaction, which is used for various purposes: security monitor, criminal law, etc. Steps of face recognition are detection, feature extraction and recognition. This final project is focused on how to make face recognition system of profile image.

The input data are images of human face from side view. Before it is processed, each image passes processing stages, such as resizing, converting from RGB representation to BW, labeling and filtering. Then image passed feature extraction using Wavelet Transform which then generates feature vectors from each image. These characteristic seen from the contour of the face from a reference point. Next, feature vectors be quantized and modeled with a Hidden Markov Model (HMM), and be trained to generate a database for entire HMM. The recognition of each images be done through an evaluation of the HMM. The output of this system is information about the owner's face.

This final project uses the images of 18 people with 16 different variations of facial expression or tilt. The accuracy of system reaches 85%

Keywords: *face recognition system, profile image, feature extraction, Wavelet Transform, Hidden Markov Model*