

ABSTRACT

The human face consists of several parts that have different characteristics, which stretches from the forehead to chin as eyes, nose, ears, lips, cheeks, forehead, and hair. It seems that so far research on face recognition ranged more about security. Research about security system is a face detection system to identify a person based on digital images or video that included then used as data in the processing of a security system.

In this Final Project discuss the human face recognition techniques for Presence system using Principal Component Analysis (PCA) and Support Vector Machine (SVM). For feature extraction using PCA method, it is a step to find the important features that represent an image. While for the classification using SVM method, it is a method to find the best hyperplane that can separate each a single face class with another class of faces.

Research in this Final Project is part of the initial phases to build a Presence system as a whole, where the focus is how to implement PCA and SVM methods to be able to recognize a face image taken using webcam, and test those methods so it can produce a face recognition technique with 95% accuracy.

Keywords: *Face detection, PCA, SVM, Digital Image Processing.*