

ABSTRACT

One of the vital work stations in a Japanese four-wheeled vehicle parts manufacturer is a quality control workstation. The quality control workstation is tasked with checking the quality of products ready for sale using an x-ray machine by sampling. Inspections are carried out by sampling because the machines are limited with expensive machine prices so the machines need to be guarded. On the other hand there is no system or security device used to maintain the machine. So the company plans to install a security device by controlling access to the quality control workstation. In this research, the design of a security system is smart security with face recognition security technology. Facial recognition systems can help solve problems efficiently without intermediaries or direct contact with the system created. The system using face recognition has been widely applied using the PCA (Principle Component Analysis) method. PCA method testing for face recognition is done using MATLAB with a database input in the form of a face image, the database has the same size and file format processed at the image processing stage, the testing stage is based on the results of feature extraction from PCA in the form of Eigenface and threshold determination. In the end PCA results were feasible as a face recognition method, because the research data showed good results with a small error rate of 26 test data.

Keywords: Face Recognition, Image Processing, PCA, Eigenface, MATLAB