

ABSTRACT

Security systems are indispensable in everyday life, it is aimed at controlling the granting of access rights to certain people. Traditional security system to access cabinets of course varies from key, password, or ID card. The downside of this system is that it is difficult to remember, disappear, even easily known to others..

Based on the problem above, in this final project is created a security system in the cabinet access using face image detection or commonly known as face recognition using the Eigenfaces method. Face recognition is one of the biometrics technologies used to identify or recognise an individual targeting a person's characteristics. This system is rated to have a fairly high level of security, since the face image is difficult to emulate, modified and stolen when compared to traditional security systems such as locks, passwords or ID cards. Later the face image will be processed by image processing until the image is recognized by the data base, if the familiar face is contained in the database then the system will send a signal to the Arduino to open the closet.

The result of the facial recognition process using the Eigenfaces method in controlling the open door cover system has a success accuracy rate of reaching 94.7% with 19 facial samples, with an average introductory process time of 6.22 seconds. As well as having a working success rate of solenoid tool in an open state with 88% accuracy to 25 samples of images listed in the database and accuracy of 80% for 5 samples that are not listed in the database i.e. the solenoid is locked.

Keywords: *Face Recognition, Image Processing, Eigenfaces, Mikrokontroler, Arduino, Biometrics*