

ABSTRACT

Home Automation is a system that facilitates human work by using technology so provide comfort feeling and an easier life. There are many methods used in home automation for locks and doors was not able to cope with disability people such as people who do not have hands or people who can not move their hands and other problems when suddenly the key of house lost and make owner of the house can not enter to their house. In this final project implemented the automatic key using face recognition with eigenface method and automatic door using speech recognition with method of hidden markov model (HMM) based on Raspberry PI to solve that problems. Some users that test the system have different accent. From the test result can be concluded that for the open door system, door and key can be open at a distance of 0.3 to 0.7 meters with an average accuracy of 67.2% and response time of 7.87 seconds. While the average accuracy at the best condition of 90.0% and the average response time of 7.74 seconds. The security system to open the door is very good because it successfully to rejects all users that are not stored in the database. For the door closing system, door and lock closed at a distance of 0.3 to 0.7 meters with an average accuracy of 55.3% and an average response time of 4.99 seconds. While the average accuracy at the best condition of 70.0% and average response time of 4.93 seconds. The accuracy obtained influenced strongly by distance, angle, light intensity, sound intensity and accent, while the response time influenced by distance, sound intensity, accent and the speed of user say voice command after beep sound and speech recognition method used.

Keyword : Home Automatin, Face Recognition, Eigenface, HMM