

ABSTRACT

One of the biometric-based security systems is face recognition, based on differences in facial characteristics. Therefore everyone has their own characteristics that can be used as a password. Through this research, home locks can be managed using home security system based on facial recognition.

This prototype has 2 systems, the automation system and the security system. In this automation system, Telegram applications can control relay modules to control lights and house key. The security system can control relay modules based on recognizable faces. If stranger trying to enter the house, the system will give a warning to the homeowner via telegram. Face recognition uses OpenCV based open source library for computer vision and uses the Fisherface method for extraction of features and classification methods that use the Python programming language.

Overall the successful rate of the system reach 98.5%. The experiment of this research shows that bright light condition with smile expression gave the best result with 100% success with an average confidence value of 20.06547 and 2.6883 seconds for the average computing time.

Keyword : Raspberry Pi, Face Recognition, OpenCV, Fisherface, Telegram