

ABSTRACT

Home security system with good accuracy and efficiency in controlling door lock access is needed in order to identify people who enter the house accurately. Home security conventionally uses a key to open the door, making security low due to several factors, namely the ease of duplicating keys, the possibility of keys being lost or changing hands. Various studies have been conducted to test several facial recognition methods to find a good method with high recognition accuracy.

In this research, the authors used the Haar Cascade algorithm for the face detection process and the Convolutional Neural Network method for the classification process. The FC-51's IR sensor used to detect the user, which in turn activates the lights and camera. The face recognition system as well as the internet of things in an effort to improve the home security system are expected to make it easier for users to monitor and control access to the door lock system for homeowners so that it becomes safer and more efficient.

The results of the research from home security system using face recognition with the Convolutional Neural Network method, the system has succeeded in classifying users and foreigners with the optimal level in the range of 61-100 lux up to 93,33%. This system is also supported by features from the telegram bot to be able to monitor door lock system access, display notifications, and control features through the telegram bot to provide access to people who are not recognized but are authorized by the user.

Keywords: Home Security System, CNN, Face Recognition, Door Lock System, IoT.