

ABSTRACT

Safe monitoring systems play an important role in managing security and accessibility in environments such as offices and residences. However, in general relying on physical keys or PIN combinations has the potential to be vulnerable to the risk of loss, theft or misuse. Therefore, this research is aimed at overcoming this problem by implementing an automatic safe monitoring system using the fisherface method and an interactive feature that allows users to check the status of the door (open or closed) via the Telegram Messenger application. This research uses an ESP32-CAM microcontroller, which has the ability to process images and videos, as well as carry out tests for system accuracy and functionality. The results of testing the entire system using the confusion matrix calculation show 100%, which means the system is working well. Telegram testing succeeded in sending information in real-time, ensuring that users can monitor the condition of the safe immediately and responsively, increasing the level of security and comfort in its use.

Keywords: *Safe, ESP32-CAM, Fisherface, Telegram*