

ABSTRACT

In today's digital era, the need for security and surveillance in the work environment is very important. To answer these needs, we developed an innovative smart home surveillance system for CV Jasa Multi Teknik, using a combination of CCTV technology, Raspberry Pi 4, and smartphone applications.

The methodology used in the development of this system is a literature study, which involves collecting and data from various sources related to smart surveillance technology. The system developed is not only able to display CCTV video output to a smartphone, but is also equipped with a feature to detect employee drowsiness based on facial and eye pattern analysis, as well as detection of hotspots that indicate a potential fire. When the system detects one of these conditions, it will automatically activate the buzzer as an early warning and send a notification to the associated smartphone. This allows for a quick response to prevent work accidents or losses due to fire, increasing safety and efficiency in the workplace. The use of Raspberry Pi 4 as a control center ensures that this system is not only effective but also cost-effective, offering a solution that is easy to operate and manage via a smartphone.

This study shows the great potential for the use of smart technology in improving surveillance systems, especially in the context of the service and engineering industries, where safety and security are top priorities.

Keywords: CCTV, Drowsiness Detection, Fire Spot Detection, Raspberry Pi 4, Smart Home Surveillance.