Hotspot detection for wall-mounted air-conditioner system

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ABSTRACT
This paper presents the overall design of the hot spot detection and air flow control for a wall-mounted air-conditioner system. The system is designed to find out the hot areas that will cause the cool air from the air-conditioner not equally distributed to all areas in a room. Therefore, one of the solutions is to control airflow of the air-conditioner so that the cool air could reach to that particular area for cooling purpose. As a result, it will increase the efficiency of the air-conditioner by cooling the hot areas (hotspot) instead of cooling the area that has already cooled. The random air swing in most conventional air-conditioner system does not help much in cooling the hotspot area, however, the proposed system is designed to cater that issue. The experiment has been done on the system by using the highest temperature method to detect the presence of human. The system can detect human based on the generated temperature array. For testing and data analysis, the user interface was developed using Matlab and the real application software was built on a smartphone using Android Studio software in order to control the airflow conveniently.

KEYWORDS:
hotspot; air-conditioner; air flow; energy efficiency