ABSTRACT

Image Processing is a method for processing images into digital form for specific purposes. Initially, this image processing function is to improve and enhance the quality of an image, but with the times and the emergence of computational science it allows humans to retrieve information contained in an image. One of the uses of image processing in this final project is to calculate human objects that are useful for controlling room temperature based on the number of people in the room. then a tool was made that could control room temperature using raspberries as a microcontroller and Arduino to control the fan as air conditioner. By using a webcam, the system will detect objects in the room. The condition of on or off the fan and fan speed will be adjusted according to the number of objects detected by the system. For example, when the number of people in the room is 1 person, the fan will automatically turn on at low speed. The fan speed increases according to the number of people in the room. Conversely, when there are no humans in the room, the fan automatically turns off. The success rate in this study is around 95.5%, which means the system and tools can function properly.

Keywords: Arduino Nano, DHT22, Image Processing, Infrared Sensor, LCD20x4, OpenCV and Raspberry Pi 3.