

ABSTRACT

The human brain and visual system pay more attention to some parts of an image. Visual attention has been studied by researchers in physiology, psychology, nervous system, and computer vision for a long time. Recent studies show that visual attention aids object recognition, tracking, and detection as well. Salient Object Detection is chosen because it has two advantages. First, help the detector object handle different orientation objects. Second, the proposed form can vary to suit the object.

In this final project, Salient Object Detection will be implemented in human body weight estimation systems based on digital image processing. Through the pre-processing stages which are done manually and continued with the saliency process, the output is a grayscale image. From there, the image will be calculated pixels to be input in calculating the estimated body weight.

Testing was carried out using 48 images obtained from 16 people. After testing, the saliency technique without threshold resulted in an average accuracy of 84% with a standard deviation of 13.05 kilograms. RMSE results for system performance with saliency techniques without threshold are 13.3612. As for the test results for the saliency technique using threshold has an average accuracy of 87% with a standard deviation of 15.06 kilograms. RMSE results for system performance with saliency technique using threshold is 10.9173. The saliency technique without threshold produces 56% higher accuracy than the saliency technique using threshold.

Keywords: Weight, Salient Object Detection, Digital Image Processing