

ABSTRACT

Image processing in its implementation is used for the efficiency of work related to image processing or images. In this study, image processing is implemented to detect victims of natural disasters, whether they are alive or not. The system in this study can detect victims of natural disasters and see their movements by displaying a graph that distinguishes the victim is alive or not from lying in a state of adequate lighting and the chest or back is visible because the system detects chest or back movements from a distance of 4 to 6 meters. . Faster R-CNN as an object feature detection method in this case to identify victims of natural disasters using Python and machine learning libraries, such as Tensorflow and OpenCV. The dataset used is a custom dataset, totaling 400, namely 347 human classes and 53 non-human classes. The best model used after passing the matrix testing process is the model that gets 93% accuracy, 99% recall, 93% precision, 150000 steps, 300 epochs and 0,002 learning rate.

The system will detect the movement of the chest or back using *motion detection* by knowing the point of the shoulder through an open pose so that it can build RoI to detect movement. After experimenting with 1 mannequin and 3 humans, the motion detection accuracy was 100%.

Keywords: *Object detection, Faster R-CNN, RoI, Motion Detection, Open pose*