

ABSTRACT

Natural disasters are natural events that result in a large impact on the human population that comes suddenly and cannot be avoided by anyone. Natural disasters can also damage and destroy buildings so that in the aftermath of natural disasters such as earthquakes, landslides, tsunamis and others, the search for land routes is hampered due to unstable land surfaces and terrain that is difficult to reach by the SAR (search and rescue) Team.

In this study, the output of a natural disaster victim detection system is still alive or not. So that survivors can be rescued first so they can get first aid and make it easier for the SAR Team or people around in the process of evacuating victims of natural disasters.

In practice, the YOLO (you only look once) method is used in this final project to identify victims of natural disasters. The dataset used to detect disaster victims is a custom dataset containing 347 human class images with various poses. In one of the best models used, an accuracy value of 93.6% was obtained to identify victims of natural disasters. After the victim is detected, the system will detect the movement of the chest or back using *motion detection* by utilizing OpenPose in building a *Region of Interest* (ROI) to determine whether the detected victim is still alive or not. The results of the ROI accuracy test for reading movement in determining life or not using 4 subjects 3 humans and 1 mannequin get 100% accuracy, it can be concluded that this system works well.

Keywords: *Object Detection, YOLO (You Only Look Once), Natural Disasters, Open Pose, Region of Interest (ROI).*