

ABSTRACT

Elderly Humans (seniors) When humans enter old age (elderly) make the body's work system, both psychological and physical, experience a decrease in functionality. Because it is very vulnerable to danger to the elderly, so that elderly families want a solution to help them in the event of a distress to the elderly. The way this system works is to use a webcam, which will detect the movement and position of the elderly in the house using the You Only algorithm. Look Once (YOLO). The YOLO algorithm applies a single neural network to the entire image. This network will divide the image into regions and then predict bounding boxes and probabilities, for each bounding region box the probability is weighed so that it can classify an object or not. At the end, the bounding box with the highest value will be selected to be used as a separator of an object from another.

How this system works is that first the recording camera will be positioned in a room with a detected area of 3 meters x 3 meters then the camera is placed in the upper corner of the room, the system will perform image input inference and in this final project will be compared which performance is the best between falling system with openpose or not with openpose.

The results that have been obtained are the best model with the best performance in the openpose model by getting 100% precision, 100% recall, F1 score 100 mAP 100% and the resulting accuracy reaches 100% with the model parameters used is the ratio 70%: 30 %, Batchsize 64, Learning rate 0.01.

Keywords: *Elderly, fall detection, YOLO, Object Detection*