

## ABSTRACT

The advancement of industrial technology is experiencing rapid development and progress along with the advancement of modern technology. One example that greatly impacts the industry is the livestock industry which can be applied to identification and localisation systems using object detection to increase efficiency and productivity.

R-CNN is a derivative of Convolutional Neural Network which is commonly used on image data. CNN itself is used to detect and recognise an object in an image. CNN is a technique that is inspired by the way humans produce visual perception or what can be said is that the ability to see humans from the eyes is processed by the human brain to make it a visual.

The results obtained after conducting research at the location of the farm and processing it into an image in the form of a video, and then processed again by getting the image results in the form of a video that has successfully detected the presence of livestock properly with an object detection system using the Regions based Convolutional Neural Network algorithm. The most optimal accuracy is obtained at a height of 10 metres in a stationary state with an average accuracy of 55.5% for stationary drone conditions, while for moving drone conditions it is obtained at 5 metres above the object with a speed of 0.1 m/s with an average accuracy of 50%.

**Keywords:** *UAV, Detection, Drone, R-CNN.*