

ABSTRACT

At present, video that contains pornographic content are very easy to access. People of all ages and backgrounds can easily watch it. Therefore, an effort is needed to complicate people to be able to watch pornographic videos. This research will use one of the object detection algorithms, namely You Only Look Once (YOLO) to detect the presence of pornographic content in the video for censorship purpose.

YOLO is one of the developments of Convolutional Neural Network (CNN) object detection algorithm, and YOLO is able to detect an object with a fairly high accuracy and higher frame rate compared to other state-of-the-art object detection algorithms. The model in this research is trained by using dataset that contains 6267 images that consist of 3 classes, namely non-porn easy, non-porn difficult, and porn.

In this research, the dataset scheme is using 2507 train data, 2507 validation data, and 1253 test data. The dataset is divided into 3 classes, namely npe (non-porn easy), npd (non-porn difficult), and porn. Performance parameter that is evaluated is mean Average Precision (mAP). The highest mAP value is 48.13% by using hyperparameter configuration of 0.001 learning rate, 100 epoch, and 32 batch size for the training phase, and with addition on fine-tuning process with 0.0001 learning rate, 35 epoch, and 4 batch size. The model is successfully implemented on the desktop application for detecting and censoring pornographic image in a video with average frame rate of 25 fps.

Keywords: object detection, CNN, YOLO, censorship, pornography