ABSTRACT

Street crimes, home invasion, burglary has been a primary form of crime in many cities and streets in Indonesia, it is conducted at night, unexpected and cause damages, missing property and even injuring innocent citizens. In this research, an explanation of a solution by using a CCTV system prototype to detect criminal activities.

Implementing the use of YOLOv3-tiny algorithm to detect the behavior of people carrying sharp weapons which is trained in Google Collaboratory and the model's dataset is obtain by scouring the internet and manually. Dataset is in the form of images in the .jpg format. Using FLASK as a web frame network which will be used in a NUC Intel minicomputer, a webcam camera will be used to be the input of the system, inputting real-time footage to the minicomputer, it can then be remotely controlled by the user's laptop using TeamViewer. The research area will be conducted in Jln Mengger Hillir, Sukapura, Buah batu, Bandung.

The results of the training is an average loss of 0.974 and mAP of 83% which means this training model is accurate, the input size image will be 416x416 for optimal accuracy and detection as well as decent frame rate this is done in the implementation test. In Jln Mengger Hillir, two suspicious activities are detected meanwhile in Kostan Cahya 8 suspicious activities are detected while 6 sharp weapon are detected.

Keywords: YOLOv3-Tiny, Flask, Mini-pc, Dataset, Training.