

ABSTRACT

Numbers are collection of lines and curves, numbers are objects that vital in everyday life. Every human has their own characteristics in writing digit numbers, this condition attracted the researchers to test a model of deep learning to detect digits of number written by human hands and to detect numbers in some important letters whose the writting digit is unclear and difficult to be classify by the human sense of sight. Then the CNN (Convolutional Neural Network) method is used to detect digits written by human hands and help people to know whats the number is written in some important letters when the number is unclearly and difficult to be classify with human eyes.

This Final Project research uses the YOLO method as an algorithmfor detecting digits that written by hand. The YOLO model is one of the most widely used algorithms today for object detection. The digits detected are commonly used in everyday life, such as the numbers 0 to 9.

This research uses CNN method with YOLOv8 algorithm, the model is run on Google Collaboratory with Python-3.10.12 programming language with Ultralytics library version 8.0.20, the dataset used is its own dataset annotated with Roboflow framework. From the result of test the best model is YOLOv8x with mAP value is 96.9%, the precision value is 99.8%, the recall value is 100%, the F1 score is 99.9% and the FPS value is 91.

Keywords: *Convolution Neuron Network (CNN), Digits Number, Handwritten, YOLO, YOLOv8*