

ABSTRACT

Computer vision is a field of science that uses computers to understand the content of the image. An example of its application is Optical Character Recognition (OCR) that recognize objects that form of writing image data. Usually OCR is used in reading information written on an image. The example is License Plate Recognition (LPR) is a vehicle number plate recognition system.

To build a LPR system, the system should have the ability to detect the location of the license plate, separating the characters of the license plate number and read the character. From some of these capabilities, which have the biggest challenge is the ability to detect the location of the license plate. That is because the image must be detected by the system consists of several objects which is the vehicle, not the vehicle.

This research will develop methods used to detect the location of vehicle number plates using the Histogram of Oriented Gradients (HOG) and classification using K-Nearest Neighbor (KNN). The image that will be tested amounted to 228 images taken from a distance of 1-3 meters, and the angle of the image around 0-15 degrees from the camera, and the position they were taken from the middle and not the center of the vehicle. The system is built using HOG with a block consisting of a 2x2 cell where the cell consists of 8x8 pixels and uses the value $K = 5$ and the threshold value = 0.7 for KNN, this system produces an accuracy of 86.84%.

Keyword : *Optical Character Recognition, License Plate Recognition, Histogram of Oriented Gradient, K-Nearest Neighbor*