

Abstract: Vietnam License plate characters and numbers recognition based on improved algorithm using Artificial neural network

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Abstract

In this paper, we focus on the characters & numbers recognition part and give out an improved method to recognize characters & numbers of Vietnam License Plates (LP), we will use a Multi Layer Perceptron (MLP) neural network and back-propagation (BP) algorithm to recognize characters & numbers of the Vietnam LP. In the training work, we will use two networks for characters & numbers training with noises, which the computing time and accuracy will be improved, in the using network work, we will use the image processing technology for pre-processing to obtain high quality of characters & numbers before put in the trained network to improve accuracy of the system. Specially, we will consider for the specific characteristics of Vietnam LP (size, shape, one-row LP and two-row LP) and we implemented 600 Vietnam LP images, which obtained from the actual system, these images are very different background such as illumination, license angles, size and type, colors, light conditions in Vietnam environment. Our approach more effective than of some the existing method earlier and satisfied for all types and color of Vietnam license plates and Vietnam environment, average rate of accuracy to is 98.00% and average computing time is 0.13s to finish recognize a LP image.

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