Development of a license plate recognition system for a non-ideal environment

Abstract

A new algorithm for license plate character recognition system is proposed on the basis of Signature analysis properties and features extraction. Signature analysis has been used to locate license plate region and its properties can be further utilised in supporting and affirming the license plate character recognition. This paper presents the implementation of Signature Analysis combined with Features Extraction to form feature vector for each character with a length of 56. Implementation of these two methods is used in tracking of vehicle's automatic license plate recognition system (ALPR). The developed ALPR comprises of three phase. The recognition stage utilised the vector to be trained in a simple multi-layer feed-forward back-propagation Neural Network with 56 inputs and 34 neurons in its output layer. The network is trained with both ideal and noisy characters. The results obtained show that the proposed system is capable to recognise both ideal and non-ideal license plate characters. The system also capable to tackle the common character misclassification problems due to similarity in characters.