Abstract

License plate recognition is a fully automated real time technique that has been widely used for identification, theft control and security validation of vehicles. For recognition and extraction of desired regions of the number plate of the vehicle, different algorithms are used. An image processing technology based on license plate recognition (LPR) that is being used to identify vehicles, using neural networks and image co-relation was developed by K. Yilmaz [2]. In this paper, a different novel approach has been presented to increase the quality of the image and to enhance the results for extracting license plate from dull and low intensity images. In the previous technique the recognition rate (percentage of image recognized) reached was 96. 64% [2], but now using multithresholding and neural pattern recognition (NPR) techniques together with artificial neural networks, a higher recognition rate of 98. 40% has been achieved. Certain problems related to neural networks in the previous research methodology such as blobs extraction, segmentation and character recognition, that inhibit complete extraction of features from number plate of the vehicle were analyzed in this approach. The proposed technique helps to improve the quality of the images and detect the characters or digits of the number plate with a better recognition rate.
References

- Jianyu Zhao, Shujian Ma, Weimin Han, Yang Yang, Xudong Wang, "Research and Implementation of License Plate Recognition Technology," IEEE, Control and Decision Conference (CCDC), 24th Chinese 23-25 May 2012.
- Huang Lin, Yang Tie-jun, "Vehicle license plate Recognition Based on Wavelet
Transform Modulus Maxima and BP Neural Network, IEEE, Natural Computation (ICNC), Eighth International Conference on 29-31 May 2012
- Rong-Tsai Lee, King-Chu Hung, "Real-Time Vehicle License Plate Recognition Based on 1-D Discrete Periodic Wavelet Transform", IEEE, Computer, Consumer and Control (IS3C), International Symposium on 4-6 June 2012
- Bo Li, Bin Tian, Qingming Yao, Kunfeng Wang, "A Vehicle License Plate Recognition System Based on Analysis of Maximally Stable Extremal Regions", IEEE, Networking, Sensing and Control (ICNSC), 9th IEEE International Conference on 11-14 April 2012
- Xiuxia Yu, Hongyu Cao, Haidong Lu, "Algorithm of License Plate Localization Based on Texture Analysis", IEEE, Transportation, Mechanical, and Electrical Engineering (TMEE), International Conference on 16-18 Dec. 2011

**Index Terms**

Computer Science

Artificial Intelligence

**Keywords**

License plate recognition, Multithresholding Technique, Neural Pattern Recognition

Artificial Neural Networks.