Vehicle License Plate Identification for Oblique Images

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Abstract

This paper is to investigate how to locate the car license plate position and identify the license letters and numerals from the images taken from the oblique angle. Histogram Equalization [1] and Kuwahara Filter [2][3] algorithms are used to manage the images. Histogram Equalization can increase the color difference between the license letters as well as numerals, and their background. Kuwahara Filter can eliminate the noise and enhance the contour of different sections in images. Wavelet Transform [4] is then applied to extract the high frequency items in images. The large variance of grayscale values around the license plate can produce large coefficients of high frequency items. Otsu binarization algorithm [5][8] can increase the contrast between the high and low frequency sections in images. The letters and numerals in license plate have the high frequency property, so the position of license plate can be found. By applying structure characteristics of letters and numerals [9], the license number can be identified.

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