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An improved method to isolate Vehicle License Plate

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In a License Plate Recognition (LPR) system, vehicle license plate isolation is one of the major tasks. By sending this isolated vehicle license plate image into an Optical Character Recognition (OCR) system, the license plate can be recognized. Locating the license plate in a vehicle image, the non-uniformity of license plates and the captured images which consists of skewed license plates are the key problems when it comes to the license plate isolation problem. The work proposed in this paper is a solution to the vehicle license plate isolation problem.

The first phase of license plate isolation process is the conversion of the input image into grayscale. This may help to reduce the luminance of the colour image. As the second phase, the boundaries of the objects in the image will be improved by filling any unwanted holes. This filling process is called dilation.

Next the, edge processing is performed on the dilated image both horizontally and vertically and, by drawing histograms for these two processing, the probable candidates for the license plate locations are identified. However, there may be consecutive columns and rows which consists of drastically changing values in the histograms. These are smoothed in the next phase. Now, the low histogram value regions are identified as the unwanted regions and by removing these, the probable candidate regions are identified. The most probable candidate which may contain the license plate is considered to be the highest histogram valued region. Closely located line of letters in the license plate with a plain background colour causes to generate such higher histogram values rather than in other regions.

Finally, our algorithm work on different levels of illumination and skewed images. The efficiency of our algorithm is significantly increased and it is around 80%.

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