

工程与应用

一种新的基于Radon变换的车牌倾斜校正方法

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摘要 车牌的倾斜给车牌字符分割与识别带来不利的影响。基于Radon变换, 提出了一种新的车牌倾斜校正方法。对车牌图像在 $[-20^\circ, 20^\circ]$ 范围内进行Radon变换, 并对变换后的结果求一阶导数绝对值的累加和, 将累加和的最大值所对应的Radon变换的角度作为倾斜角度。对水平倾斜的车牌进行双线性插值旋转校正, 对垂直倾斜的车牌进行双线性插值错位偏移校正。实验结果证明, 该方法简单实用, 对光照、污迹等不敏感, 抗干扰能力强。

关键词 [车牌](#) [倾斜校正](#) [Radon变换](#)

分类号

Novel approach for vehicle license plate tilt correction based on Radon transform

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Abstract

Tilt vehicle license plate have a bad effect on its character segmentation and recognition. In this paper, a novel approach for number plate tilt correction based on Radon transform is presented. Radon transform in the range of $[-20^\circ, 20^\circ]$ is implemented on the number plate images. Then the accumulative total of absolute value of difference of the results is calculated, respectively. The angle of the Radon transform corresponding to the maximal accumulative total is confirmed as a skew angle of the number plate. Bilinear interpolation rotation correction is performed to the plate that is tilt to the horizontal line, and bilinear interpolation offset correction is made to the plate that is tilt to the vertical line. Experimental results show that the method can be implemented easily and offers robustness when dealing with dirty license plates and license plates in variant lighting conditions.

Key words [vehicle license plate](#) [tilt correction](#) [Radon transform](#)

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