自动化学报 2003 29 (03): 457-465 ISSN: 0254-4156 CN: 11-2109/TP

高性能的车牌识别系统

刘济林,宋加涛,丁莉雅,马洪庆,李培弘

浙江大学信息与通讯工程研究所,杭州

收稿日期 2002-8-8 修回日期 网络版发布日期 接受日期

摘要
描述了一个车辆牌照识别系统. 该系统首先利用车辆位置传感器和图像采集卡来自动获取车辆图像并传输至计算机, 然后识别车牌字符. 结合网络技术, 特定车牌信息和车辆图像可以很方便地从远端检索到. 文中介绍了该系统的结构及工作流程, 以及两种字符的识别方法:基于PCA-LSM的有限中文字符识别方法和基于结构特征分析的字母及数字字符识别方法. 在实际应用环境下, 该系统的日间整体识别率超过97%, 夜间整体识别率超过95%.

关键词 车辆牌照 字符识别 PCA-LSM 结构特征

分类号 TP391.41

Vehicle License Plate Recognition System with High Performance

LIU Ji-Lin,SONG Jia-Tao,DING Li-Ya,MA Hong-Qing,LI Pei-Hong

Institute of Information&Communication Engineering,Zhejiang University,Hangzhou

Abstract
We present our License Plate Recognition (LPR) System. Using vehicle position sensors and image acquisition card, it captures images of the vehicles automatically and sends the images to computer, then recognizes characters of the vehicle plate. Combined with the web technique, information of certain plates and the images of the vehicles can be browsed conveniently from remote sites. The system frame and workflow of our LPR System are introduced. Some problems and two of our proposed character recognition methods, i. e. method based on PCA LSM for limited Chinese character recognition and method based on structural feature analysis for alphabetic and digital character recognition, are addressed in full details. The field applications under practical conditions show that the whole recognition rate of our system is over 97% in daytime and 95% at night.

Key words Vehicle license plate character recognition PCA-LSM structural features

DOI:

通讯作者 刘济林

作者个人主页 刘济林;宋加涛;丁莉雅;马洪庆;李培弘