International Journal of Research (IJR)
e-ISSN: 2348-6848, p- ISSN: 2348-795X Volume 2, Issue 10, October 2015
Available at http://internationaljournalofresearch.org

Number Plate Recognition Using Character Segmentation and Edge Detection

Sandhya Jasud
jasudsandhya777@gmail.com,
SP's Institute of Knowledge College Of Engineering
Shraddha Palande
palandeshraddha301994@gmail.com,
SP's Institute of Knowledge College Of Engineering
Amruta Chavan
amrutachavan888@gmail.com,
SP's Institute of Knowledge College Of Engineering
Sujata Shinde
shindesujata999@gmail.com,
SP's Institute of Knowledge College Of Engineering
Prof.Pratap S. Singh
pratap.singh.s@gmail.com
SP's Institute of Knowledge College Of Engineering, Department of computer engineering,
Savitribai Phule University.

Abstract
In India, number plate models are not followed strictly. Number plate recognition is difficult due to variations in the representation of vehicle number plates and characters on plate are in different English languages. In the existing system Traffic Police Tow/Carry abandoned vehicles without notifying vehicle owner. Owner gets panic when he come to know after a long time. The existing system has several drawbacks like Towing people don't give exact information what which police station the owner should contact. Towing contractors demand huge amount to free vehicle. Some time the vehicle gets damage due to improper handling. Basically, owner has no problem if its abandoned vehicle is getting carry by traffic police, but he/she wanted a notification of same. The traffic police cannot tow/carry any vehicle without a written order (Panchnama) from the traffic constable. So, there is a need of such a system which can help Vehicle owner, Traffic police and Towing Contractor to solve all types of problems. We wanted to provide a good solution to this problem via integrating this process with image processing i.e "Number Plate Recognition Using Character Segmentation And Edge Detection". The proposed system has several advantages over a existing system like system can immediately send a notification to vehicle owner about his/her mistake. The Notification will also help owner to find the nearest police station where he/she can approach to release his/her vehicle. The System will also decide how much fine should be taken from owner.

Keyword: Number plate localization; Morphological operation; Character segmentation; Thresholding; Edge detection.

Introduction:

Traffic Police Tow/Carry abandoned vehicles without notifying vehicle owner. Owner gets panic when he came to know after a long time. Even Towing people don't give exact info what which police station the owner should contact. We will use the image as input which is taken by towing contractor in our system to extract

International Journal of Research (IJR)
e-ISSN: 2348-6848, p- ISSN: 2348-795X Volume 2, Issue 10, October 2015
Available at http://internationaljournalofresearch.org

the vehicle number so that system can immediately send a notification to vehicle owner about his/her mistake. The Notification will also help owner to find the nearest police station where he/she can approach to release his/her vehicle. The System will also decide how much fine should be taken from owner.

Problem Statement:

- Traffic Police Tow/Carry abandoned vehicles without notifying vehicle owner.
- Owner gets panic when he come to know after a long time
- Even Towing people don't give exact info what which police station the owner should contact.

Existing system

In the existing system, traffic Police Tow/Carry abandoned vehicles without notifying vehicle owner. Owner gets panic when he come to know after a long time. Even Towing people don't give exact info what which police station the owner should contact. Towing contractors demand huge amount to free vehicle. Some time the vehicle gets damage due to improper handling

Fig(a): Existing system of towing vehicles.

Proposed System

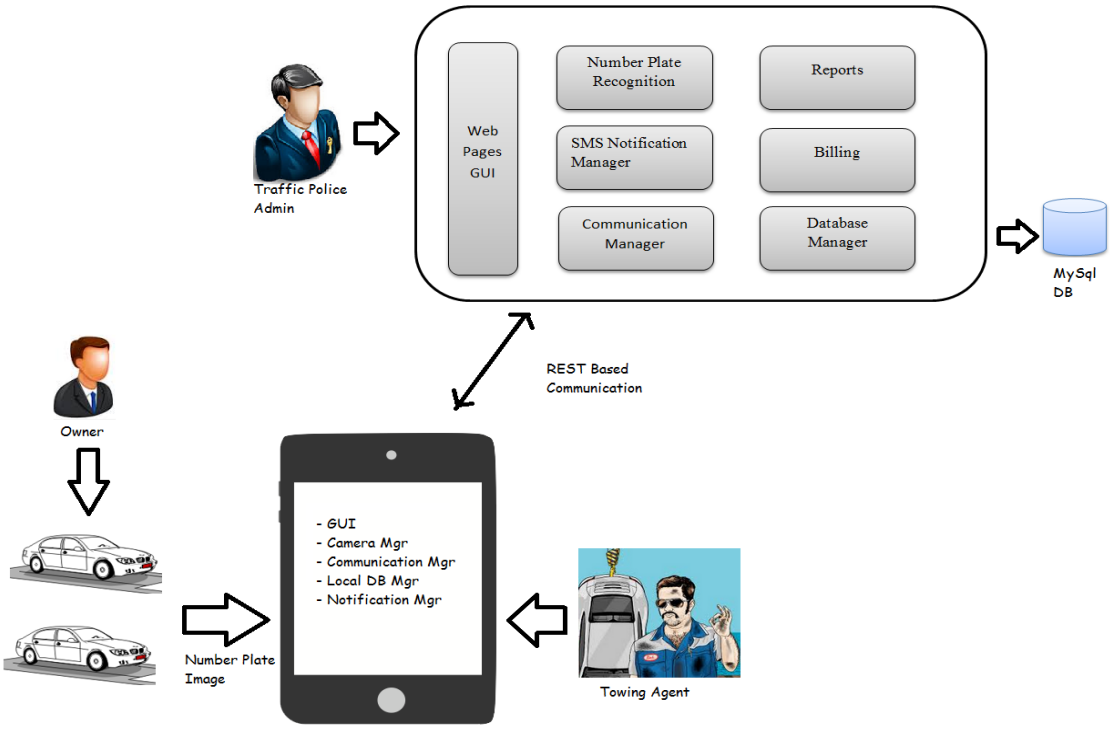
Here the system will be based on Client Server architecture. Towing agent will have take photo using smart phone, where this photo will be send to server. Server will extract number from images using "Number Plate Recognition" technique. Then server track vehicle owner's information on the basis of vehicle number. Server will send SMS notification to owner saying his/her vehicle has been deposited into some nearest police station. When the user came to withdraw his/her vehicle, server will calculate the fine. Server will send SMS receipt to user of vehicle for his/her payment.

System will support 3 user roles :

1. **Traffic Police Admin :** Access via Web
2. **Towing Agent :** Access via Smart Phone
3. **Vehicle Owner :** Access via Web

International Journal of Research (IJR)
e-ISSN: 2348-6848, p- ISSN: 2348-795X Volume 2, Issue 10, October 2015
Available at http://internationaljournalofresearch.org

Architecture



Fig(b) : Architecture of towing system

Hardware Interfaces

1. Processor – Intel Core2Duo, Pentium – III/i3
2. Speed – 2.4 GHz
3. RAM - 1 GB (min)
4. Hard Disk - 50 GB
5. Android 2.3 enable handset

Software Interfaces

1. Operating System : Windows 7
2. Front End : Java 7
3. Back End : MySQL 6
4. Tomcat 7
5. JDK 1.7
6. Android SDK
7. Eclipse Indigo

Acknowledgement

We express our sincere and profound thanks to all our teachers. We wish to thank Prof. Pratap S. Singh (guide) for his student-like enthusiasm and his guidance from time to time. We heartily thank for all his help and valuable time. His invaluable advice has helped us bring this work to completion.

Conclusion

In this paper, a new approach for license plate detection and recognition, based on the color features in license plates using character segmentation and edge detection . The main motive behind implementing this project is to help Vehicle owner, Traffic police and Towing Contractor to solve all types of problems.

References

[1] " An Iranian License Plate Recognition System Based on Color Features" Amir Hossein Ashtari, Graduate Student Member, IEEE, Md. Jan Nordin, and Mahmood Fathy , IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS, VOL. 15, NO. 4, AUGUST 2014

[2] "Research on an Efficient Method of License Plate Location", Elsevier , Yuren Du, Wen Shi, Caiyun Liu Information Engineering College, Yangzhou University Yangzhou, China 2012 International Conference on Applied Physics and Industrial Engineering

[3] 2012 International Conference on Applied Physics and Industrial Engineering "An Improved License Plate Location Method Based On Edge Detection." Rongbao Chen, Yunfei Luo ,School of Electrical Engineering and Automation ,HeFei University of Technology, Hefei,China

[4] Automatic vehicle number plate detection and recognition, 2014

[5] http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6992954&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6992954

[6] Automatic number plate recognition system using modified stroke width transform, 2013

[7] http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6776246&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6776246

[8] Number Plate Recognition for use in different countries using an improved segmentation, 2011

[9] http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=5751407&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D5751407