Analysis & Simulated Designe of Number Plate Detection

[1]Dr. Amit Verma, [2]Ravi Kant, [3]Parminder Kaur, [4]Surinder Kaur, [5]Iqbaldeep Kaur
[1,4,5]Dept. of CSE, Chandigarh University, Gharuan, Mohali, Punjab, India
[2]Dept. of ECE, PTU, RBIEBT
[3]PTU, RBIEBT

Abstract
In real time number plate detection , some vehicle number plates can not be recognized due to very poor illumination, motion blurred effect, fade characters and so on. The key problem is that number plate can not be segmented accurately and correctly. Many techniques have been proposed. In this paper, we present a edge detection method based on neural network. In Neural network systems, each character is introduced as an input data to the system. The system learns these characters. After that, it compares the input data characters to the existing characters. As a result, the character which has very similar rate is activated. Neural Network. classifier is used to recognize the characters.in which adaboost and template matching techniques are also used for more accuracy and to extract the plate accurately. This new approach provides a good direction for number plate detection.

Keywords
Neural Network, Adaboost, Template Matching, Median Filters etc.

I. Introduction

Automatic number plate detection has been adopted widely into numerous applications such as unattended parking, security control and stolen vehicle verification. Therefore, it is is still a challenging problem to detect number plates under complex conditions, such as number plates with various colours, sizes, and taken under various illuminating conditions and various angles of view, or with various backgrounds. and may be utilized for measuring the travel time of vehicles or other applications which need detailed plate information identification. a high recognition rate of plate information and a high judgment accuracy of vehicle colours, the image processing algorithms that recognizes each character on the plate correctly or judge the vehicle colours as it would be close to human sense are important keys as well as the images that are high definition enough to distinguish each character. create colour samples which have correspondences of colours and RGB values in advance .The each of colour sample is created supposing different illumination conditions which make the plate intensity differently. a latest high definition camera and a high resolution lens, which enables to distinguish each character clearly, to achieve a high recognition rate with the image processing algorithms [2].

II. Applications of Object Detection

Detection means finding the location of the object and recognizing what it is . traffic control video surveillance of unattended outdoor environments, video surveillance of objects.
Applications of digital image processing are such as:
A. Digital Camera Images: Digital cameras generally include dedicated digital image processing chips to convert the raw data from the image sensor into a colour-corrected image in a standard image file format. Images from digital cameras often receive further processing to improve their quality, a distinct advantage that digital cameras have over film cameras. The digital image processing typically is executed by special software programs that can manipulate the images in many ways
b) Intelligent transportation systems: Digital image processing has a wide applications in intelligent transportation systems, such as automatic number plate recognition and traffic sign recognition.
c) To Detect Infrastructure Damage Caused by Earthquakes.
d) In conservation of the medieval MOSAIC.
f) IN wireless network sensors . Image Processing in Road Traffic Analysis

III. Various Techniques of Object Detection

Performance Evaluation of Object Detection Algorithms for Video Surveillance, Object Detection using a Max-Margin Hough Transform ∗, Performance Evaluation of Object Detection, Algorithms for Video Surveillance , Comparison of Generative and Discriminative,Techniques for Object Detection and Classification , Object detection and localization using local and global Features, A survey of techniques for object detection., multiple Component Learning for Object Detection Comparison of Generative and Discriminative, Techniques for Object Detection and Classification ,segmentation and object recognition, using edge detection techniques , techniques for image classification, Object detection and object segmentation simple colour conversion ,edge detection and connector measurement technique is also used for object detection methods .Thus this type of techniques are most widely used for object detection in different conditions.

IV. Comparative Analysis Techniques of Object Dtection

Methodology	Author Name	Keywords	Purpose/Issues	Future Scope
Multiple class adaboost [6]	Mohammad Mahdi Dehshibi et : al	persian OCR, Multiclass adaBoost, character segmentation are used	Achieves high accuracy in plate localization, segmentation, and Recognition	challenge due to the diversity of plate formats and multiform outdoor illumination conditions during image acquisition

SVM Based License Plate Recognition System[7]	Kumar Parasuraman	Automatic Number Plate Recognition, Support vector machine	higher recognition accuracy and higher processing speed than using traditional SVM based multi-class classifier.	it can be used for toll charge supervision of highway and in other applications.
A Novel Multiple License Plate Extraction Technique for Complex Background in Indian Traffic Conditions [8]	Chirag N. Paunwala et: al;	License plate recognition, sigmoid function, Horizontal projection, Mathematical morphology, Aspect ratio analysis, Plate compatible filter	Highlight the number of probable candidate regions in an image	vehicles identify plates from video sequence in which removal of motion blur is an important issue associated with fast moving
Farsi License Plate Detection based on Element Analysis and Characters Recognition[9]	Mehran Rasooli et:al	the Window movement , Candidate regions modification , Character parallelism, analysis , artificial neural network classifier	our proposed algorithm is able to detect the license plates as well.	for numerical signs and municipality plates as well
Vehicle Number Plate Detection using Sobel Edge Detection Technique [10]	Er. Amit Verma	Edge Detection, Median Filter, Smoothing, Connector, Masking, Colour Conversation	a detection algorithm that employs a novel image descriptor and detects license plate	So the scope of the work lie in enhancement of the resultant image under variable illumination. The same work further can be extended in the detection algorithms for faces
vehicle classification using novel edge detection technique[11]	Poonam Yadav et:al;	Edge Detection, Median Filter Fuzzy Logic	To detect the edges to get the shape and size of the vehicle and classify the vehicle	we can also detect the vehicle number plate with the help of Novel fuzzy logic based edge detection technique which will give better results over other techniques

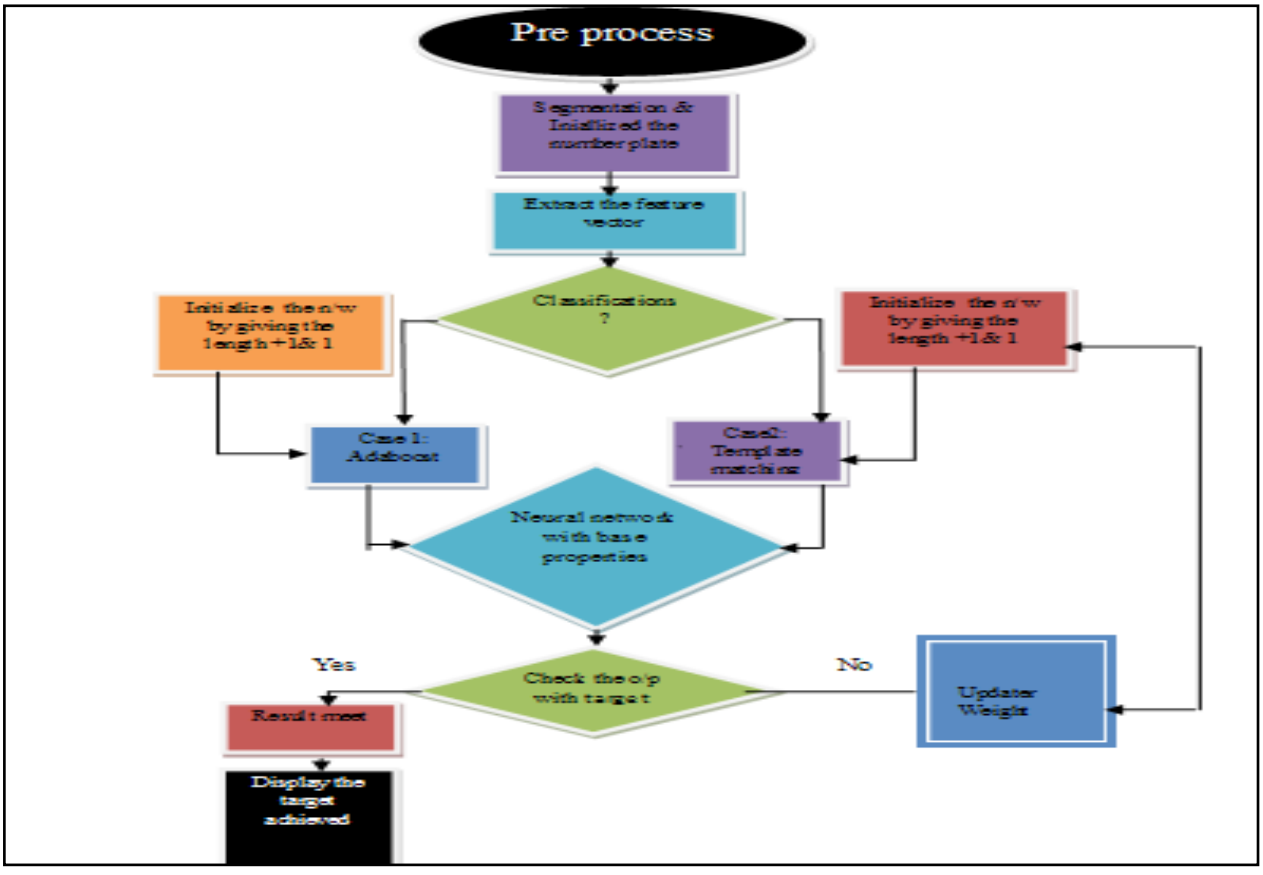


Fig. 1: Flow Chart of the Number Plate Detection

V. Conclusion

With the help of presented technique in this paper, we can detect the number of any plate just by giving as input the image of the plate, and number gets extracted . If the detection is not clear and proper, which we find, is due to improper light segment or varying illumination effects by using of this algorithm method the number plate would be clear to a extent as compared to other methods.

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[4] S.Kother Mohideen Dr. S. Arumuga Perumal, Dr. M.Mohamed Sathik Head, IT & PG Dept. of Comp.sc, Sadakthullah Appa College, Tirunelveli-627 011 Prof & Head, Dept. of Computer Science, St. Hindu College, Nagarcoi Reader Dept. of Computer science Sadakathullah Appa College Tirunelveli-627011, " Image De- noising using Discrete Wavelet transform,IJCSNS", International Journal of Computer Science and Network Security, Vol. 8, No. 1, January 2008 213

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Dr. Amit Verma is working with Chandigarh University as Professor, He has more than 120 papers in his credit in various national/international journals.

Er. Ravi Kant is working as an Assistant Professor department of Electronics and Communication Engineering, Rayat and Bahra Institute of Engineering and Bio-Technology, Kharar, Mohali, Punjab, India.

Er. Parminder Kaur is reserch scholar department of electronics and communication engineering Rayat and Bahra Institute of Engineering and Bio-Technology, Kharar, Mohali, Punjab, India.

Er. Iqbaldeep Kaur is working with Chandigarh University as Professor; He has more than 120 papers in his credit in various National/international journals. He has more than 120 papers in his credit in various national/international journals.