(Project Title)
ADVANCED VEHICLE NUMBER PLATE RECOGNITION

Review -3

Project Members

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Presentation Outline

- Introduction
- Objectives
- Literature review
- Proposed design
- Work plan of proposed design
- References

INTRODUCTION

- Number plate recognition is an Image processing technology that uses optical character recognition on images/videoes to read vehicle registration plates.
- The registration number is a alphanumeric or an alphanumeric code that uniquely identifies the vehicle within the issuing region's database.
- This unique number then can be used to identify vehicles uniquely for various security, road-rules and mass surveillance application.

•. They can also be used as a method of electrc collection on a pay-per-use roads.

•This technology tends to be region-specific, owning to plate variation from place to place.

Introduction

- A license plate recognition system is one type of intelligent transportation system .
- It is a type of technology in which the software enables computer system to read automatically the license number plate of vehicle from digital pictures
- This document aims to extract image frames from a streaming CCTV footage, recognize the vehicle number and convert it into its corresponding text format.
- Template matching has been used earlier in recognition of digits and letters.
- using a SIMULINK model in MATLAB which is developed to extract the vehicle number from the number plate.

Objectives

- The main focus of this project is to use intelligent systems that take advantage of the latest developments in the field and computing and camera technology to improve the reliability and success rate of the system.
- Improve the detectability of number plates from heavy traffic zones i.e., multiple vehicles within the same frame.
- Tailored for Indian market consists mainly of motorcycles, rickshaws, cars and trucks.

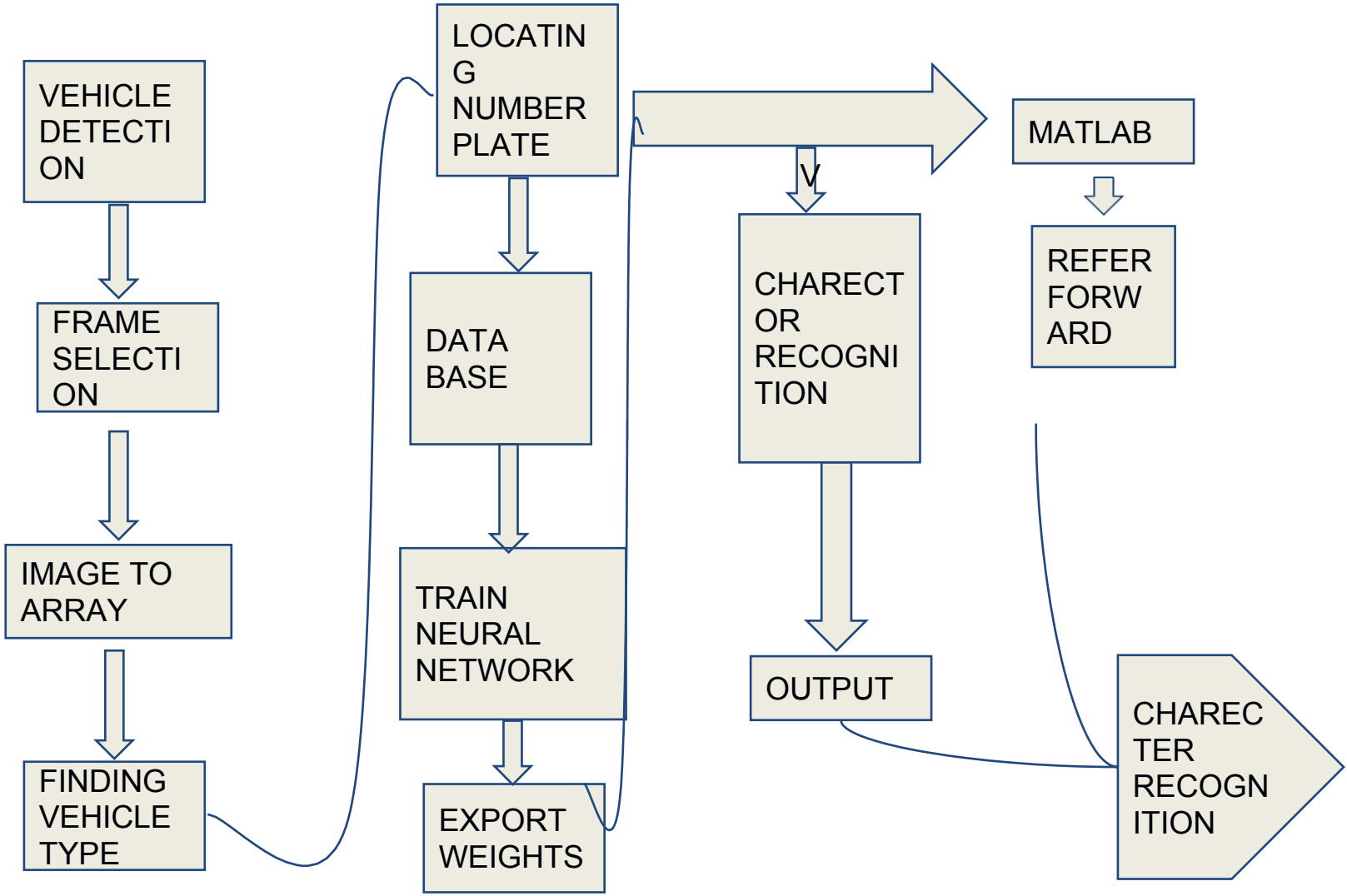
LITERATURE SURVEY

Sl. NO	Author's Name	Title of the paper	Journal Name/Year of Publication	Summary of the paper
1.	Pratisha Guptha, G.N. Purohit,	Number Plate Extraction using Template Matching Technique	International Journal of Computer Applications	These paper says about the methodology of template matching which executes the preprocessing in Adobe Photoshop which requires to be linked to MATLAB.
2.	Vandini sharma	Automatic license plate recgonation	International Journal of Innovative Reasearch in Science	These research paper is about the uses of Optical Character Recognation Technique along with template matching method to recognize the number plate from the input.

3.	M.I.Khalil	Car plate Extraction using Template Matching	International Journal of Computer Theory and Engineering	• These Paper says the designed an Automated number Plate detection technique • It implements support vector machines and reports average character recognation.
4.	Divya Gilly	License Plate Recognation	International Journal of Engineering Research and Applications	These paper presents the OCR technique use in 2D-plane and thus are able to achieve success only for a limited visual range and shooting distance.

5.	C chunyu	Vehicle License plate Recognation	Intrnational Conference on Computer Science and Communicatio ns	These paper proposed a method which is only used for number plate recognation of vehicles.The propose method uses both morphologiacl process .

PROPOSED DESIGN

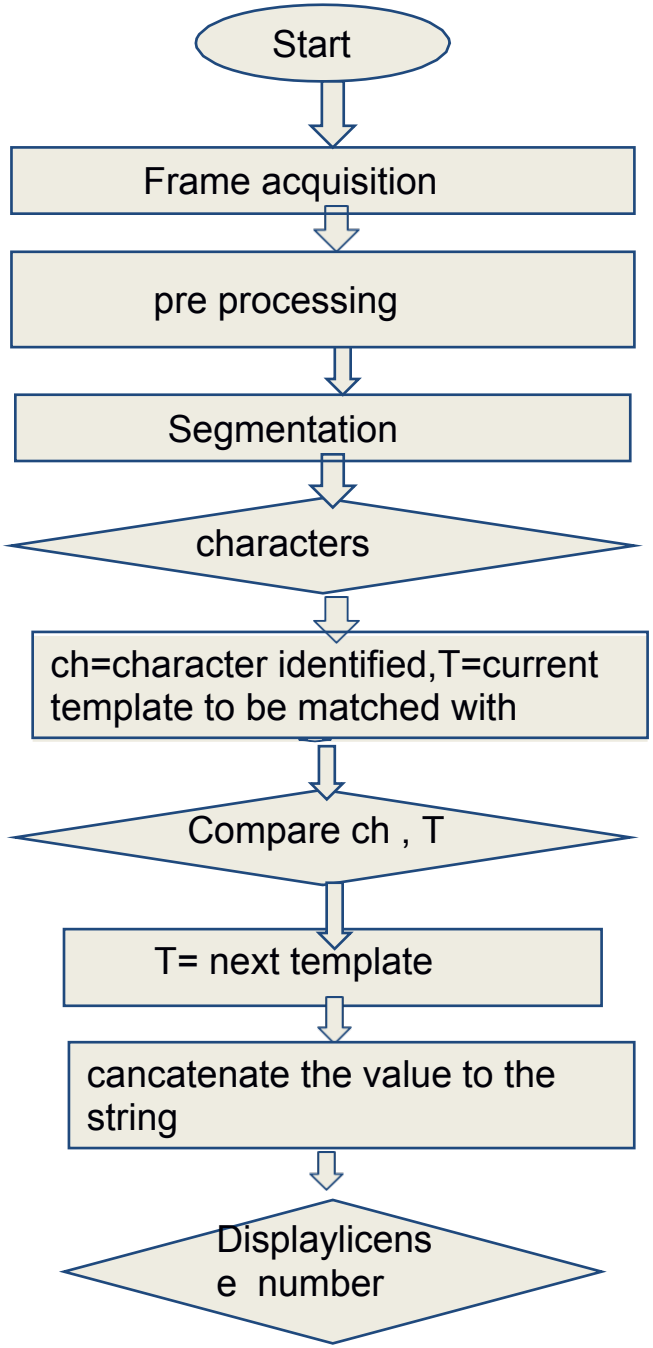


Methodology

The system to extract number from the license plate of a vehicle is a four step process.

- **License plate isolation**
- **Character isolation**
- **Template matching**
- **Character recognition**

Architecture



Vertical Edge Detection

Edge detection is performed to the de-noised image. Generally the image has a lot of horizontal lines so only vertical edge detection is preferred than both vertical and horizontal edge detection methods as it minimizes the complexity of the algorithm.

C. Segmentation

This part of the process is used to separate the individual characters from the number plate so that it can serve as an input to the template matching process. Hence the output of this phase will be all the characters in the number plate.

D. Template Matching

This phase is used to match the template with the input segmented image. Some considerations are required in this N phase, the template image must be smaller than the input image and the resolution of both the images must be similar.

- After charecter recognition we give the input to the raspberry pi and fetch the output .
- we give the matlab output which are in form of charecters and give it as input to raspberry pi.

conclusion:

In the proposed system, we have designed for the detection of licensed number plate vehicles. First we select the image, remove noise and find the interested area of image, then the license plate location is extracted using edge detection then segmentation of each characters individually. At-last the template matching method is used with the use of correlation for recognition of each characters in the number plate. Some difficulties as follows

1. Blur Images.
2. Broken Number Plate
3. Similarities between some characters such as O and D; 5 and S; 8 and B, E; O and 0...etc.

Expected outcome of the proposed work.

We expect to improve the accuracy of the system and reduce the time taken to recognise the number plate.

We look to differentiate similar characters like O and D , S and 5 , etc. Whilst retaining a high speed of recognition

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