LICENSE PLATE RECOGNITION SYSTEM USING OpenCV

Image Processing

CSE 4019

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AGENDA

- AGENDA
- ABSTRACT
- OBJECTIVE
- INTRODUCTION
- LITERATURE REVIEW
- IMPLEMENTATION
- CONCLUSION
- REFERENCES

ABSTRACT

- License plate recognition is an image processing technique which can be used for maintaining the traffic discipline and also for monitoring and surveillance purpose.
- Image-processing technology used to identify vehicles by their license plates, as the name suggests. The detection consists of three main steps: motion detection, license plate detection, and license plate tracking.
- It’s also particularly useful when it comes to detecting stolen vehicles.This technology is gaining popularity in security and traffic installations. The technology concept assumes that all vehicles already have the identity displayed (the plate!) so no additional transmitter or responder is required to be installed on the car.

OBJECTIVES

Aim of the project :

- A license plate recognition system aims to recognize license plate using opencv.
- This technology can be used in various security and traffic applications, such as the access-control system features.
- The image processing technique will be used to recognize the character on the license plate by using various techniques like binarizing, segmenting, etc of image.

Scope of the project :

- License Plate Detection can help us identify violators of the traffic rules, especially at signals, etc. License Plate Detection in case of two wheelers, can be combined with helmet detection for possible drivers not wearing helmets while driving.

INTRODUCTION

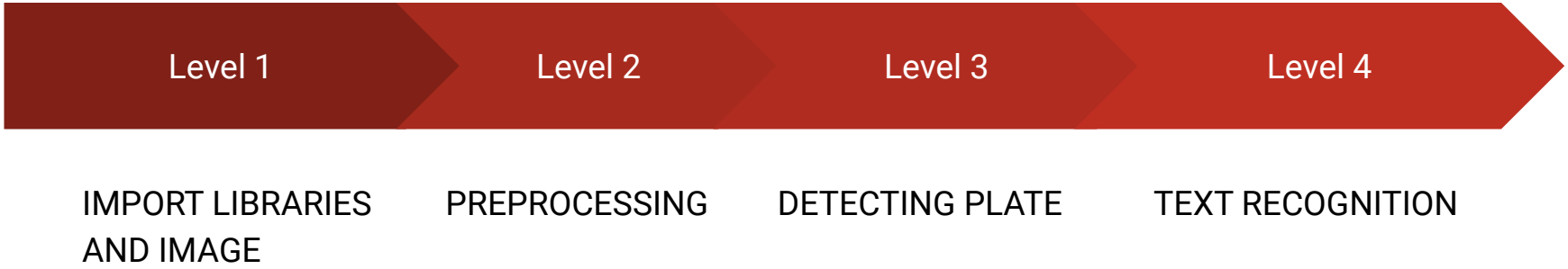
- License plate detection also considered has various application such as parking lot management, stolen vehicle identification, traffic flow monitoring, electronic toll collection, etc.
- This topic has been extensively researched by researchers worldwide to improve the performance.
- It uses optical character recognition (OCR) on the license plate image to recognize and extract the characters of a vehicle number plate.
- OpenCV library is used using Python language for image processing.
- PyTesseract for optical character recognition for text extraction from processed license image.

LITERATURE REVIEW

Sl No.	Author	Title	Year	Findings	Relevance to our project
1	J. Chong, C. Tianhua and J. Linhao	License Plate Recognition Based on Edge Detection Algorithm	2013	The concept of OCR was well defined.	The working of the algorithm is quite similar to what we want to achieve
2	R. R. Palekar, S. U. Parab, D. P. Parikh and V. N. Kamble	Real time license plate detection using openCV and tesseract	2017	1.Text detection 2.Text Recognition using tesseract and openCV	Helped us with clear understanding of openCV library
3	R. Huang, M. Fan, Y. Xing and Y. Zou	Image Blur Classification and Unintentional Blur Removal	2019	Removal of noise in the form of blur	Helped us increase the efficiency of our project
4	Tushar Goel, Dr. K.C. Tripathi, Dr. M.L. Sharma	SINGLE LINE LICENSE PLATE DETECTION USING OPENCV AND TESSERACT	2020	Use of PyTesseract	Helped us get in depth knowledge of OCR from a particular portion of an image.

IMPLEMENTATION

- **ARCHITECTURE DIAGRAM**



CONCLUSION

- The method used is efficient, accurate and less time consuming
- Implementation of the same can help manage traffic and increase car security
- Further improvements can be done by using more advanced deep learning algorithms so it can work in every possible condition and can be implements in real-time monitoring, multiple license plate detection at a time, etc.

REFERENCES

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THANK YOU