Universiti Teknologi MARA

Car Recognition Using Bayes Classifier

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Thesis submitted in fulfilment of the requirements
for Bachelor of Computer Science (Hons.)
Faculty of Computer and Mathematical Sciences

January 2017

ACKNOWLEDGEMENT

Alhamdulillah, praises and thanks to Allah because of His Almighty and His utmost blessings, I was able to finish this research within the time duration given. Because of His willing giving me the opportunity to complete this Final Year Project (CSP650) subject. I also would like to precise my gratitude and appreciation to all those who gave me the chance to complete this report.

Firstly, my special thanks to my supervisor Miss Siti 'Aisyah Binti Sa'dan whose help, stimulating suggestion and encouragement in supervising me to coordinate my project especially in writing report. I do really appreciate for all the time her advising me in along this project. Special thanks also to my lecturer CSP650, Dr. Hamidah Binti Jantan that give the constant support in this subject.

Special appreciation also goes to my parent and entire family for their understanding, cooperation and encouragement in helping me from the beginning until the end. Last but not least, I would like to appreciate all the given moral support and kindness to all my friends that are directly and indirectly that involved in the supporting me. Thanks for the friendship and memories. Thank you very much.

ABSTRACT

Car recognition has been widely explored in the research study of the pattern recognition. The car recognition has its own aim whereby it able to collect the significant information on the car images such as identifying the car model and the car types. The collection of the information of the car has been used in the field such as for the security, vehicle census, and traffic surveillance. However, the problem occurred when the expanding in population along with economic prosperity, an immense increase in the number and types of vehicles on the roads occurred. As the number increasing on the road, the officer of car census will do counting of the car numbers on the road. The car count process manually may mislead to the wrong counting due to certain circumstances such as the car speed, increasing number of cars in a peek hour and the time consumed. This paper present an approach method to recognize a car based on the feature of the car tyre using the Bayes Classifier. The proposed method uses the images taken by using a Digital Single Lens Reflex (DSLR) camera to capture the car image at beside of the road as the input. This paper extract the feature using the MATLAB tool by applied the regionprops to measure the properties of image region in order to get the centroid of the tyres after the process of data cleaning. The Bayes Classifier is functioning as the technique to do the recognition. This technique applied the mathematical probability to identify the image is a car or not a car. The Bayes Classifier using the basic Bayes' Rule formula. The probability value of a car must indicate as 1 to be recognize as a car and the probability value other than 1 will be assume as not a car. The testing data consist of a combination of car, lorry, and motorcycle. The experimental result is using 10 testing images dataset where the accuracy determined is 80% for in this project.

TABLE OF CONTENTS