Universiti Teknologi MARA

Plate Number Measurement by Using Kohonen Neural Network

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ABSTRACT

License plate is an unique identification of vehicle in every country all over the world. This paper is about a system designed to measure the size of characters in a motorcycle license plates since too many motorcyclists using the number plate that is not allowed by law in Malaysia country. This system would be a great help for Road Transport Department (RPD) to detect unstandardized used of plate characters size during their operation by capturing the images of the plate number. The proposed license plate measurement method consists of required image processing technique leading to successful plate measurement. The Kohonen Neural Network (KNN) is the proposed artificial neural network algorithm for learning and measuring the size of license plate characters in images. It is because the Kohonen algorithm is unsupervised learning style by self-organizing feature map. The system performs classification techniques to get the final result of automatic inspection. The accuracy results of the prototype system gather from the conducted experiments for the classification of the standardized and unstandardized character image data are 93.3% and 80% respectively.

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CHAPTER 1

INTRODUCTION

This chapter presents an overview of the entire project to be developed. The background study, problem statement, research question, objective and scope of the project are included in this chapter. This chapter ends with significance of the project.

1.1 Background Study

Vehicle registration number as known as license plate number is one of important things for any vehicle. Every vehicle must have a plate number as a unique identification as the way of identifying vehicles. The registration number is given to the vehicle, rather than its registered keeper. It will stay with the vehicle until the vehicle is broken up, destroyed or exported permanently out of the country.

Generally, each country has a different type of plate numbers based on the board color used, font type and characters color. In Malaysia, the standard plate number using a white color for characters and black for the board or frame except rent car like taxi. The Malaysia motorcycles license plate characteristics such as size of the characters, board color, font type, thickness of the characters and distance between characters have been fixed. It needs to be followed by the motorcycle users. The standard character size of Malaysia motorcycle license plate is 30mm for width and 40mm height.

Jabatan Pengangkutan Jalan (JPJ) as the Road Transport Department (RPD) Malaysia was established under the Land Division, Ministry of Transport Malaysia. It is responsible for providing counter services for licensing of vehicles and drivers and the enforcement of the Road Transport Act 1987 to ensure safe drivers and safe vehicles. Road Transport Department (RPD) also