UNIVERSITI TEKNOLOGI MARA

CAWANGAN PULAU PINANG

IDENTIFICATION AND FEATURE EXTRACTION OF MOVING VEHICLE

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ABSTRACT

The traffic user has been rapidly increasing these days and due to this, serious congestions at certain locations and time occurs in particular at toll payment gateway. As such has becoming an important matter for the management of traffic controller to establish an automatic monitoring system which can provide data for analysis and manipulation by management team before an important decision on traffic management can be made. In this project, an identification and feature extraction of moving vehicle is proposed. In order to do this, it is essential to develop a system that can identify and extract the features of a moving vehicle. The objective of this project is to identify and extract the features of a moving vehicle by using MATLAB. The methodology of the system starts from importing a digital video image in AVI format, the black and white image is later go through thresholding level setting to extract feature and classification of vehicle. As a conclusion, upon completion of the program, it was successfully produce the result as expected where the moving vehicle can be identified, the feature can be extracted and classified either it is a car or a lorry during live video streaming.

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INTRODUCTION

1.1   BACKGROUND OF STUDY

Traffic control is very crucial as numbers of vehicle increase so rapidly in recent years. The road users would be very inconvenience and more importantly it can also leads to needless incidents such as accidents and some ordinary drivers is at risk of becoming victims to road bullies. Traffic congestions occurred at where people commuted on daily basis going to works. In some area the traffic congestion is so predictable such as during peak hours where people rushing to office and going back from office and this can be handle by sending traffic police personnel to ease the situation. However, at some location it cannot be predicted, it could happen due to a minor accidents or some ceremony going on or due to festival or holiday season. Especially at toll booth where small and large vehicle have to take some time to make toll payment, traffic congestion will be inevitable.

During festive season the congestion at toll booth becomes so critical where vehicle has to queue for as long as 4 or 5 km and most cases this congestion has also extended after passing through the toll booth. Therefore it is very crucial take action to tackle this issue and it is best using comprehensive system applying latest technology to monitor and produce data that can be analysed by the management to make a necessary action to avoid or at least minimise the traffic congestion. There is an intellectual transportation system is the application that includes computer, electronic, and communication technologies into roadway and vehicles where it monitor the traffic conditions, reducing congestion and improving mobility.

The intelligent transportation system is a growing scientific and engineering discipline whose main goal is to minimize the travel time of all travellers and produce over fair distribution of available resources while ensuring safety particularly under the scenario of increasing travel speeds and also meaningfully large number of