TRAFFIC ANALYZER USING IMAGE PROCESSING

By

ADI ABADI BIN AYUB

A report submitted for partial fulfillment of the requirement for the Degree of Bachelor (Hons.) In Electrical Engineering- Instrumentation

APRIL 2008

ABSTRACT

Traffic analyzer using image processing is PC based window application which capable to analyze traffic parameter such as vehicle rate by using image processing technique. Input of this application is video file which contain captured video on all top view of road. This program will fragment that video file to be several number of frame image. The image will be masked to remove irrelevant area so that not influence further processing. Captured present image and background image will be compared to extract foreground object which is usually a vehicle. Then, segmentation process will evaluate that compared image to get presence of the vehicle. Segmented image always come with noise. For this reason, median filtering is applied to segmented image to get clearer image. Then, object filtration processor will process filtered image to filter the vehicle on the image. Object filtration is based on object size in the image. Then, that frame will compare with previous frame to acquire the number of new vehicle in a present frame. That acquisition number of new vehicle in a frame will increment the present vehicle counter register.

ACKNOWLEDGEMENTS

With the name of greatest Allah, I most grateful of His willingness at last I have succeeded to complete my dissertation and this thesis as part of the requirements for the degree of Bachelor (Hons.) in Electrical Engineering.

I am deeply indebted to many people who, directly or indirectly, are responsible for this thesis coming into being. I am most grateful to En Rozan Boudville for his constructive criticism of my dissertation, and most of all for his friendship and support in all endeavor. His intense advices, lessons, ideas, courage and trust have become my inspiration towards proceeding and succeeding with my dissertation.

I am also grateful to express my deepest appreciation to my friends who lend their voice, information, ideas and their valuable time in helping me out with some problems. Last but not least is my family who has especially contributed for this project in every way. Their role is so prominent in my education that I cannot describe it with the words. They made huge sacrifices so I could be a successful person and I hope someday I will be able to claim that I have made their wish come true. My ultimate appreciation parents, brothers and sisters who provided me with all means of physical and mental comfort without any distraction.

TABLE OF CONTENT