METHOD AND SYSTEM FOR SAFE INTER-VEHICULAR DISTANCE DETERMINATION

ABSTRACT

The present invention provides a method and system that calculates the distance from a host vehicle to any preceding object using captured front images of the host vehicle and alerts the driver of the host vehicle whenever the host vehicle is too close to the preceding object. In one embodiment, the method comprises obtaining a front image of the host vehicle; computing the environmental illumination condition as the average intensity of the front image; selecting an image region of interest (ROI); dividing the ROI into a predetermined number of overlapping regions (R1, R2, R3, .., Rn), wherein n is a definite integer; computing the distance from the sequential overlapping regions using both lowest valley of intensity and red regions; and selecting the smaller distance computed from either using lowest valley of intensity or red regions as the distance from the host vehicle to the preceding object. In one embodiment, the vehicle safety alert system comprises an image capturing means for continuously capturing the front images of the host vehicle; a microprocessor electronically connected to the image capturing means so as to obtain captured images from the image capturing means to compute the distance; and a display/alert means electronically connected to the microprocessor; wherein the display/alert means is capable of alerting the driver of the host vehicle whenever the host vehicle is too close to the preceding object.

FIG 3