Real Time Alert System for Driver Fatigue Detection System

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Abstract

Driver Fatigue detection is an important role in transportation for safety system. Driver drowsiness has been one of the major causes of road accidents and can lead to severe physical injuries and deaths. This thesis presents a vision based driver fatigue detection system for driving safety and produce timely warnings that could prevent accidents via android application. A method for detecting sleepiness in drivers is developed by using a smart phone camera that point directly towards the driver's face and capture from the color video. In first step we use color space for drivers' face detection. Color images with skin color in the chromatic and pure color space YCrCb, which separates luminance and chrominance components. Then, mathematical morphological operators are used to remove noisy regions. Blob detection finds the maximum blob. Edge detection is employed to locate the regions of the driver's eyes, which are used as the templates for eye state recognition in subsequent frames. The template is correlated with different regions of the face image. The region of face which gives maximum correlation with template refers to eye region. The method is simple and easy to implement. Finally, the recognized eyes' images are used for fatigue detection in order to generate warning alarms for driving safety.