Computing non-contactable drowsiness monitoring system with mobile machine vision

ABSTRACT

This project proposes a human facial features detection based on color segmentation via skin color and Viola- Jones algorithm for real time application. YCbCr color space is used to detect the presence of skin in an image where the image is normalized, and luminance is removed to increase face detection accuracy. The second method, Viola-Jones which use Haar feature to detect facial feature such as face and eye also developed and tested. To perform in real time detection, CamShift algorithm and template matching are used to track face and eyes sequentially in Android platform. Then, the real time detection and tracking are evaluated to assess its performance. Finally, the algorithm is applied to drowsiness detection using PERCLOS.