COSC 6380 Digital Image Processing

Term Project Proposal

Iris Detection and Segmentation

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Motivation

Eyes are the window to a person’s soul. The iris carries enormous amount of information of a person. First of all iris recognition is one of the most reliable biometrics to date. It has been used extensively to verify or recognize the identity of the subject. Furthermore, eyes not only also give away a person’s emotional state, such as happy, anger and disappointment, but also can show his/her physiological state, such as level of concentration, interest, drowsiness and boredom. The movement of the pupils may as well provide information with respect to a person’s intention. Note that all of these aforementioned application domains require reliable and fast localization of iris as the initial step.

UH-Iris

Our project, currently termed UH-Iris, aims to solve the problem of fast iris detection and reliable iris segmentation. We *tentatively* plan to write a program that has two modes. The first one is the real-time tracking of the eyes when a video sequence or a live feed is given. The second one is segmentation mode, in which the eye contour will be segmented out rather than just a bounding box and the input can be static images with higher resolution. We will first try our methods on images that are well-lit, contain single subject with frontal pose, and are in uniform resolution. If time allows we will try some more challenging case.