UW Center for Pattern Analysis and Machine Intelligence

Graduate Seminar Series

Eye detection and tracking using multi-distribution particle filter

Speaker: Céline Craye
Date: January 16, 2013
Time: 4:30 pm - 5 pm
Place: E5 (5128) Refreshments will be served

Abstract :

Eye tracking plays an important role for number of human-computer interaction systems. In the particular case of driver's state of fatigue assessment, the detection of the eyes is a key component, as percentage of eye closure is highly correlated with the level of fatigue. Eye tracking is also a complicated task, as motion and rotation of the face make the eyes look extremely different. Differences of illumination depending on the weather and time of the day is also a challenging problem.

In this presentation, we present a new method for robust eye tracking using particle filter. The contribution of this work is

- The processing of the two eyes in the same particle filter, refining the position of one eye given the position of the other one.
- The use of two distributions depending on the situation. One based on pupil detection, the other one based on similarity.

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