Implementation of Face Detection and Face Tracking

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ABSTRACT

In the thesis, we implemented a face detection and tracking system. The developed system is composed of two main parts: face detection and face tracking. In the face detection part, a face detector using Haar-Like features trained by Adaboost algorithm is adopted to detect facial region. To remove the error of face region, the human eyes information can also be used. After the face detection was completed, each face candidate can be tracked in the temporal domain. In the face tracking part, KLT features are extracted and tracked between two adjacent frames. Based on KLT feature tracking, face tracking can be achieved in the developed system. To evaluate the developed system, several videos with different kinds of face movement are captured by using low-cost webcam. Experimental results show that our proposed system can detect and track facial regions well. The detection rate of our face detection is more than 96% and the detection rate of our face tracking is more than 91%. These results demonstrate that our proposed system can achieve face detection and face tracking in real-world noisy videos.

Keywords: face tracking   feature tracking   face detection   KLT tracking   eye detection

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