Easy-setup eye movement recording system for human-computer interaction

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Abstract: Tracking the movement of human eyes is expected to yield natural and convenient applications based on human-computer interaction (HCI). To implement an effective eye-tracking system, eye movements must be recorded without placing any restriction on the user's behavior or user discomfort. This paper describes an eye movement recording system that offers free-head, simple configuration. It does not require the user to wear anything on her head, and she can move her head freely. Instead of using a computer, the system uses a visual digital signal processor (DSP) camera to detect the position of eye corner, the center of pupil and then calculate the eye movement. Evaluation tests show that the sampling rate of the system can be 300 Hz and the accuracy is about 1.8 °/s. ©2008 IEEE.
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