VIEW POINT TRACKING FOR 3D DISPLAY SYSTEMS (ThuAmOR12)

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Abstract :

For 3D display systems, detection and tracking of the observer's view point is necessary to render the correct view according to the observer position. In this paper, we present a new real−time view point tracking system using a single web cam. The system can easily be installed on a standard PC together with an autostereoscopic display or stereoscopic glasses (shutter, polarized, pulfrich, and anaglyph) with appropriate video cards. For view point tracking, the first step is to detect the observer position. Our detection method is based on boosted cascade of simple feature classifiers. The detected object is observer's eyes for autostereoscopic displays or observer's face with glasses for the other case. In the second step Lucas Kanade Tracker is used to track the eyes/face. The total process can achieve a frame rate of 20Hz on a Pentium IV 3.0 GHz computer in our implementation.

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