

METHOD AND APPARATUS FOR DETECTING ABRUPT AND GRADUAL
SCENE CHANGES IN IMAGE SEQUENCES

Abstract

A method is capable of detecting both abrupt and gradual scene changes. Consecutive frames of an image sequence (e.g., a video program) are first acquired and digitized. The images are subdivided into a plurality of rectangular regions. Block matching is performed between the current frame and the Dth previous frame to determine match signals that represent the likelihood that the regions of the first frame contain visual information substantially similar to respective matching regions of the second frame. The match signals are ordered beginning with the match signals defining the best match and ending with the match signals defining the worst match. The first S match signals are selected and averaged together, to obtain an instantaneous match (IM) signal. S is user definable and is greater than zero and less than or equal to the number of regions into which each frame is divided. The IM signal provides a criteria for determining whether the first frame belongs to a scene different from the second frame. Finally, a scene change is indicated when the IM signal meets certain decision criteria. FIGURE 1.

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