

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

Abstract

A method is capable of detecting both abrupt and
5 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
10 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
15 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
20 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.