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Efficient Motion Estimation by Fast Three Step Search Algorithm

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Abstract : The rapid development in the technology have dramatic impact on the medical health care field. Medical data base obtained with latest machines like CT Machine, MRI scanner requires large amount of memory storage and also it requires large bandwidth for transmission of data in telemedicine applications. Thus, there is need for video compression. As the database of medical images contain number of frames (slices), hence while coding of these images there is need of motion estimation. Motion estimation finds out movement of objects in an image sequence and gets motion vectors which represents estimated motion of object in the frame. In order to reduce temporal redundancy between successive frames of video sequence, motion compensation is preformed. In this paper three step search (TSS) block matching algorithm is implemented on different types of video sequences. It is shown that three step search algorithm produces better quality performance and less computational time compared with exhaustive full search algorithm.

Keywords : block matching, exhaustive search motion estimation, three step search, video compression
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