Hardware Efficient Algorithm for Image Registration of Real-time Video and Image Data

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Abstract

This paper is concerned with image registration as applied to video sequences that have been subjected to geometric distortions. It describes the development of two computationally efficient algorithms to restore broadcast quality video sequences using image registration techniques. The image registration technique is based on motion vectors and found to be successful in restoring the video sequence for either affine transformations or the more general perspective transformations. It is shown that both algorithms can accurately restore the video data. The algorithms can efficiently be implemented on a reconfigurable computer system for real-time video restoration.