Block Matching Based Stereo Correspondence for Depth Calculation

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Abstract : Stereo Correspondence plays a major role in estimation of distance of an object from the stereo camera pair for various applications. In this paper, a stereo correspondence algorithm based on block-matching technique is presented. Initially, an energy matrix is calculated for every disparity obtained using modified Sum of Absolute Difference (SAD). Higher energy matrix errors are removed by using threshold value in order to reduce the mismatch errors. A smoothening filter is applied to eliminate unreliable disparity estimate across the object boundaries. The purpose is to improve the reliability of calculation of disparity map. The experimental results obtained shows that the final depth map produce better results and can be used to all the applications using stereo cameras.