Genetic algorithm has been applied to image processing (over stereo images). The algorithm can be applied to both binocular stereo data and Multiview stereo data captured by a camera matrix. When Multiview stereo images are available, they can be fully utilized for occlusion detection and improved accuracy. A suitable function that takes into account both similarity of intensity and smoothness of disparity. It is introduced to estimate a given disparity map. A genetic algorithm is used to find the best map of disparity taking into account the suitability function. These images are processed using genetic algorithm. The genetic algorithm generates a disparity gap. With the help of genetic algorithm, the images become smooth. The initial population is generated based on the dissimilarity between the original images. A fitness function is used to compute the disparity mismatch using a random Markov field. An intersection operator using color image segmentation is used, as well as grafting and elite selection.

A square tree structure is used to implement a multiresolution structure which gives similar effect as adjusting the window size at different locations in the image. To apply the genetic algorithm within the quadtree structure, an encoding mechanism is used to encode the quadtree structure. Grafting crossover, splitting mutation, combining mutation and changing mutation which are suitable for quadtree structure are applied. the approach uses the idea of occlusion detection using the geometric relationship between the captured images. The approach uses the results of the occlusion detection function to fill the inequality space, allowing for further mismatch elimination. it can also fully exploit Multiview stereo images to eliminate mismatches caused by collusion. Algorithm naturally combines the idea of occlusion detection using camera matrix, matching with adaptive window size, and including support from neighboring pixels. It can generate better disparity maps than existing approaches.