

Depth Correction by Minimizing Energy of Neighboring Regions

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Abstract

It has been proposed in this paper an idea of correcting depth map obtained according to local stereo matching. In this paper, energy was calculated based on the entire image, meanwhile, energy minimization concept was adopted, and the area obtained according to color segmentation algorithm was adopted too. The color feature and depth value among different regions and their neighboring regions are used to define the relation between the smooth and occluded regions in the energy function. Then the region energy was calculated repeatedly until the change was insignificant or the number of iterations was reached. From the experimental result, it is proved that the depth map after correction showed better object shape and depth dense sense.

Keyword : Stereo matching; Color segmentation; Plane fitting; 3D vision